THE PAPER INDUSTRY
and PAPER WORLD
NOVEMBER
1949

TECHNOLOGY DEPT.
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JOURNAL TYPE

INTERNAL TRUNNION

EXTERNAL TRUNNION

BEARING-IN-HEAD

DANDY

SPIRAL REINFORCED FRAMES

LIGHT-WEIGHT FRAMES IN STAINLESS AND NON-FERROUS

TRIANGULAR RODS AND HIGH WIRE

LAID COVERINGS AND WOVE COVERINGS OF VARIOUS MESHES

EASY LIFT DANDY STANDS

NEW OR RENEWED

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An efficient Dandy Roll Service is an important part of your production program. Here at Cheney Bigelow we repair and true up, recover and super-surface Dandy Rolls, and provide watermarking of all types. Every detail is in the hands of experts, backed by long experience, and working with the most modern equipment. Prompt, efficient service is guaranteed.

Cheney Bigelow offers many exclusive features, the outgrowth of years of experience and close association with paper mill men. Many of these features can be incorporated in your present Dandy Rolls — and on new work you can be sure of securing the latest and best in Dandy Roll design — specially adapted to your requirements.

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Cheney Bigelow Wire Works, Springfield 7, Massachusetts

PULP & PAPER
MILL EQUIPMENT

Cheney Bigelow
SPRINGFIELD, MASSACHUSETTS

RESINS AND CHEMICALS FOR THE PAPER INDUSTRY

BACTERICIDES AND DEODORANTS

HYAMINE 1622 and HYAMINE 2389 are quaternary ammonium germicides and deodorants used to produce bacteriostatic papers and paper board.

REDUCING AGENTS

Sodium and zinc hydrosulfites and their corresponding sulfoxylate formaldehydes are extremely powerful reducing agents used to bleach groundwood pulp at moderate temperatures and at low cost. They are also used to bleach kraft and semi-chemical pulps, and to strip the color from rags.

ENZYMES FOR STARCH CONVERSION

RHOZYME BB and RHOZYME E-5 are enzymes used in very small quantities to modify starch so that it may be used in surface sizes, adhesives, and coatings.

WETTING, DETERGENT, DISPERSING, AND EMULSIFYING AGENTS

THE TRITONS are synthetic, organic, surface-active agents used:

- —to increase absorbency of towel stock
- —to process raw cotton and rags
- —to clean felts
- —to de-ink waste paper
- —to soften paper
- —to improve the penetration of resins, sizes and salts
- —to emulsify wax sizes, oily softening compounds, etc.
- —to wet and disperse pigments
- —to produce uniform coatings of glue on gummed paper and tape
- —to control foam

TAMOL N is the neutral sodium salt of a complex, condensed organic acid. It is an efficient and economical means of dispersing pitch, of increasing the retention of fines, of precipitating glue, and dispersing pigments and clays in coatings.

AMBERLITE W-1

A 20 percent aqueous solution of a polymer which produces marked improvement in both the wet and dry physical properties of paper. The resin solution may be diluted and sprayed on the wet web, or applied at the size press or calender stacks. It is an excellent film-former and pigment-binder and exhibits remarkable quick-tack.

WET STRENGTH RESINS

UFORMITE—Urea formaldehyde resins in liquid and powder form, infinitely dilutible by water. Improve wet strength as well as the dry tensile, Mullen, and fold and pick resistance of paper.

TO MAKE YOUR GOOD PAPER BETTER

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

THE RESINOUS PRODUCTS DIVISION

Washington Square Philadelphia 5, Pa.

The Resinous Products Division was formerly The Resinous Products & Chemical Company

cut operating costs with OIC PACE-SETTER IN VALVES

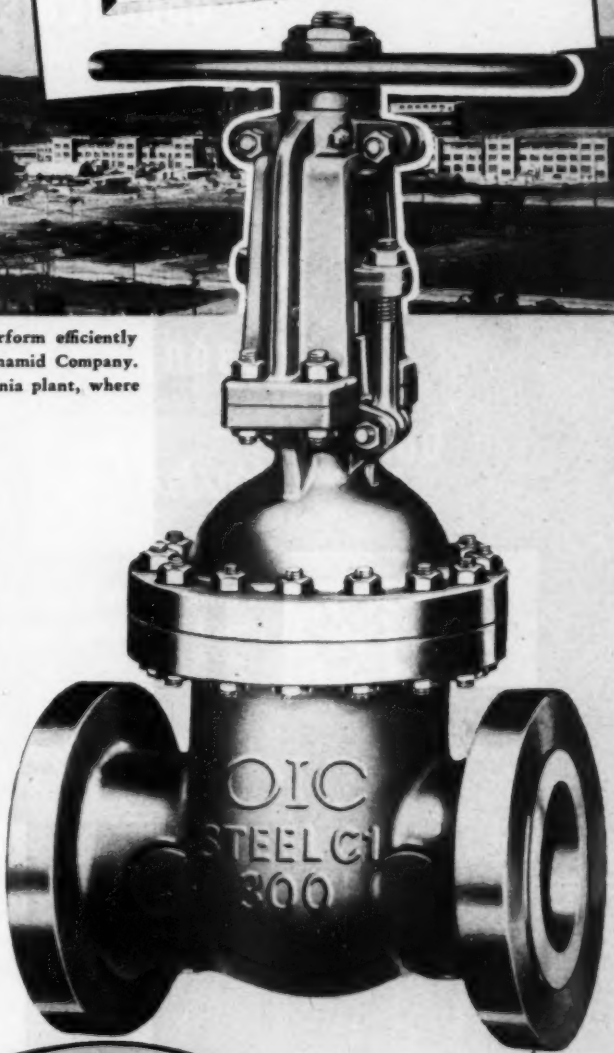
AMERICAN CYANAMID COMPANY. OIC Valves perform efficiently for the Calco Chemical Division of the American Cyanamid Company. Shown here is the company's Willow Island, West Virginia plant, where OIC Valves are installed.

Hundreds of companies, in industry after industry, are entrusting their important flow control job to the OIC long line of pace-setting valves.

The reasons are simple — these companies are finding that OIC Valves cut operating costs and give more efficient service — and they're *safer!*

In OIC Valves, leak-proof joints guard against sudden pressure-drop. The flow is protected from turbulence. Heavier-than-required construction in all parts keeps pressures and stresses within safe bounds. Wedges of heavy I-beam design stop all flow with positive closure, or open the ports for smooth, *free* flow. Integral body ribs guide the wedge to its seats with unerring accuracy — effectively reduce vibration and wear.

Handle *your* flow control requirements with OIC Valves! Their many pace-setting features cut your operating costs to a new low!



ELIMINATE VALVE CHANGE-OVER PROBLEMS WITH THE HANDY OIC CROSS REFERENCE CHART

Valve replacement made easy! Simply check the number of the valve on the line, look in the chart, and you'll find the right OIC Valve to replace it. Write for your *free* copy to The Ohio Injector Company, Wadsworth, Ohio.

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MATHIESON BLDG., BALTIMORE 3, MARYLAND

THE PAPER INDUSTRY and PAPER WORLD

(Reg. U. S. Pat. Off.)

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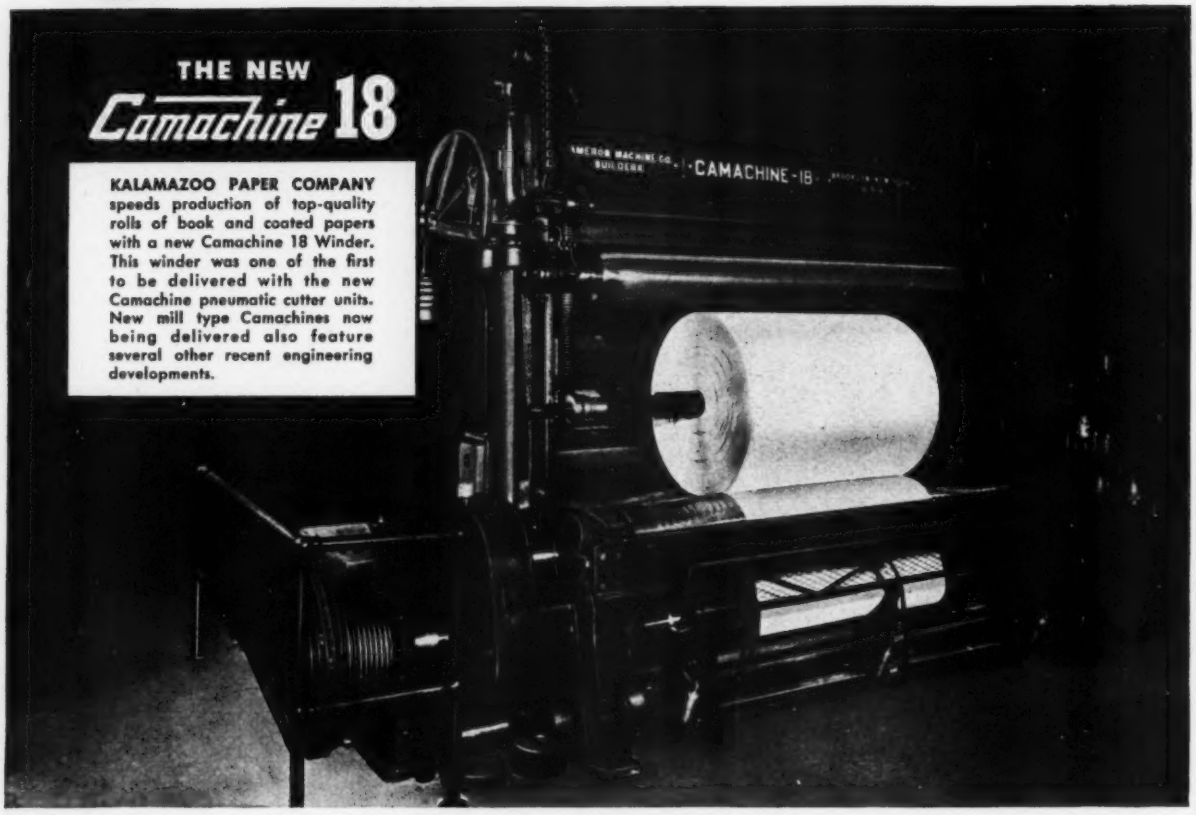
5 Great NEW Values
IN SLITTER-WINDER PERFORMANCE


THE NEW
Camachine 18
KALAMAZOO PAPER COMPANY speeds production of top-quality rolls of book and coated papers with a new Camachine 18 Winder. This winder was one of the first to be delivered with the new Camachine pneumatic cutter units. New mill type Camachines now being delivered also feature several other recent engineering developments.
CAMACHINE-18

NEW CAMACHINES are faster and more dependable than ever. They are easier to adjust and to operate, and are far more responsive to controls. They set unmatched standards for safety and precision. Investigate these five new engineering values.

***NEW!* PNEUMATICALLY CONTROLLED PRESSURE ON CUTTER WHEELS AND CUTTER SPACER BAR.** Assures whistle-clean slitting through longer runs at mile-a-minute speeds. A single control lever sets and maintains uniform pressure on the entire line of cutter wheels. No slow, separate cutter adjustments. No overloaded cutter units. Standard on all new mill-type Camachines.

***NEW!* PUSH-BUTTON CONTROLLED MOTOR-DRIVEN RIDING ROLL LIFT.** Say "goodbye" to another tedious manual operation. Speed up roll changes and add valuable minutes of productive machine and operator time. Standard on Camachine 20; optional on Types 19, 18 and 14.

***NEW!* PNEUMATIC BRAKE ON DRIVE AND IDLER ROLL.** A simple one-hand control brings the fastest, heaviest winder to a s-m-o-o-t-h, quick stop, by braking the drive roll *and* the idler roll simultaneously. This new brake corrects one of the most serious danger spots in big winder operation. Standard on all new mill-type Camachines.

***NEW!* MOTOR-DRIVEN ROLL EJECTOR.** Automatic power—to move the heaviest rolls swiftly and safely to unloading position. So gentle that not a single layer of paper can be damaged. Operates with no more effort than ringing a doorbell. Standard on Camachines 20, 19 and 18; optional on Type 14.

***NEW!* HYDRAULIC ROLL UNLOADING TABLE.** Cushions finished rolls from the winder to the floor in a smooth eight seconds, with push-button stop-and-hold control. The perfect ending for a precision roll-winding operation. Optional equipment on all machines.

Consult with your Camachine representative for complete information regarding these five new developments, and for the facts about other exclusive Camachine features which have been designed to give you faster production of better rolls.

GOOD NEWS!
These new cost-cutting features can be applied to many existing mill-type Camachines! Why not find out now how you can improve the service of your present winder equipment? Write for information.

CAMERON MACHINE COMPANY • 61 POPLAR STREET • BROOKLYN 2, N. Y.

Camachines *FOR FAST, TOP QUALITY ROLL PRODUCTION . . . the world over*

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IMPROVE SIZING
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IMPROVE PRINTABILITY
—*Test Liner, Offset, and Book Papers*

INCREASE SLIP OR REDUCE SURFACE FRICTION
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IMPROVE CREASING AND BENDING PROPERTIES
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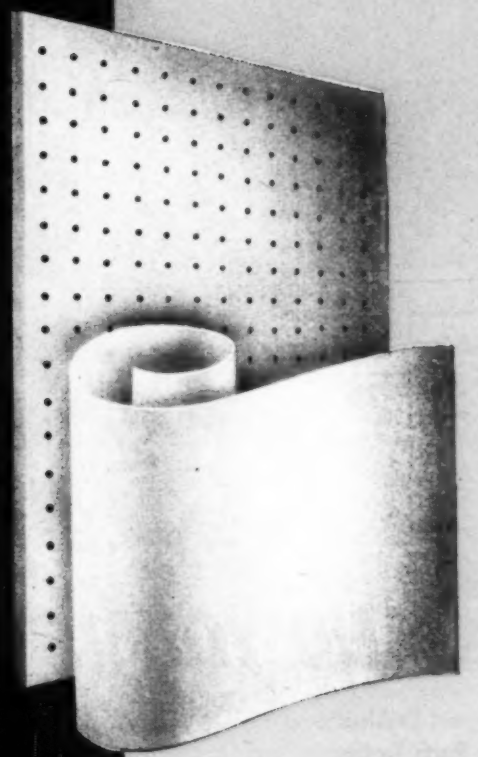
—*Book and Printing Papers*

LAY FUZZ
—*Printing Paper*

* *Only a few of the many applications for Paracol in paper and board are mentioned in this list*



See how "Paracol" can help you.
For new descriptive folder, write to:

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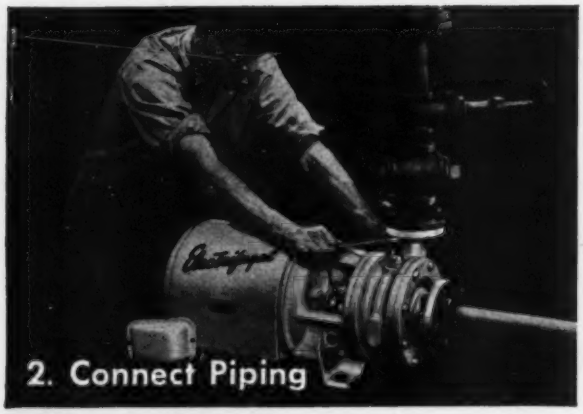
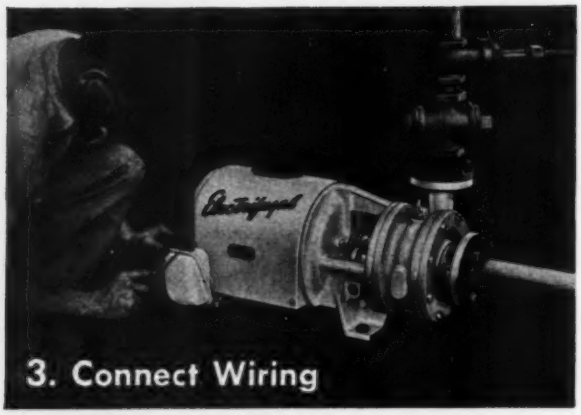
PP9-6

Electrifugal PUMP





3 Easy Steps

...AND YOU'RE READY TO PUMP

- **No Alignment Problem**
- **No Extra Parts To Buy**

You save hours of expensive installation time with *Electrifugal* pumps because the pump and motor are built as a single complete unit, shipped READY TO RUN. Note that cast iron yoke and bracket for mounting pump are a *single-piece*—eliminating a separate adapter. And because motor and pump are on a *single* shaft, perfect and permanent alignment are assured. No couplings or other extra parts to buy. Maintenance costs less, too, because pump and motor cannot get out of alignment. Packing gland is readily accessible.

The Electrifugal pump, ranging from 10 to 1600 gpm with heads to 525 feet, is just one of many types of pumps built by Allis-Chalmers for industrial uses. You can count on the recommendations of the A-C pump application engineer. For information, see your Allis-Chalmers Authorized Dealer or Sales Office, or write for Bulletin 52B6059E. A-2769

Electrifugal, Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

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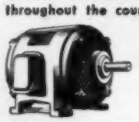


MOTORS — ½ to 25,000 hp and up. All types.

CONTROL — Manual, magnetic and combination starters; push button stations and components for complete control systems.

TEXROPE — Belts in all sizes and sections, standard and Vari-Pitch sheaves, speed changers.

MIDWEST WELDING FITTINGS
Improve Piping Designs and Reduce Costs

90° ELBOWS

REDUCING 90° ELBOWS

45° ELBOWS

LAP-JOINT STUB ENDS

REDUCERS

CAPS

SADDLES

SLEEVES

RETURN BENDS

TEES

LATERALS

CROSSES

REDUCING-ON-RUN TEES

SHAPED NIPPLES

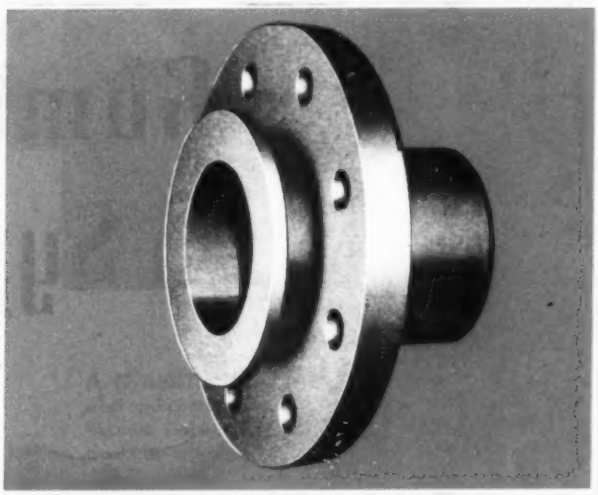
FLANGES

IN WELDED PIPING SYSTEMS

SAVE TIME and MONEY on EQUIPMENT CONNECTIONS

by using MIDWEST

LAP JOINT STUB ENDS



Substantial savings of time and money result if Midwest Lap Joint Stub Ends are used when making connections to valves, equipment or other flanged outlets in welded piping systems. They have important advantages over flanges welded to the pipe.

The swivel flange makes it unnecessary to line up the bolt holes before welding. Setting up is quick and simple because no special clamps or jigs are required to hold the face of the flange absolutely perpendicular to the axis of the pipe. Field crews report as high as 25% saving in erection time for making up a joint using Midwest Lap Joint Stub Ends in comparison with rigidly fixed flanges.

Midwest Welding Fittings improve piping—save money. Get in touch with the distributor near you.

3719

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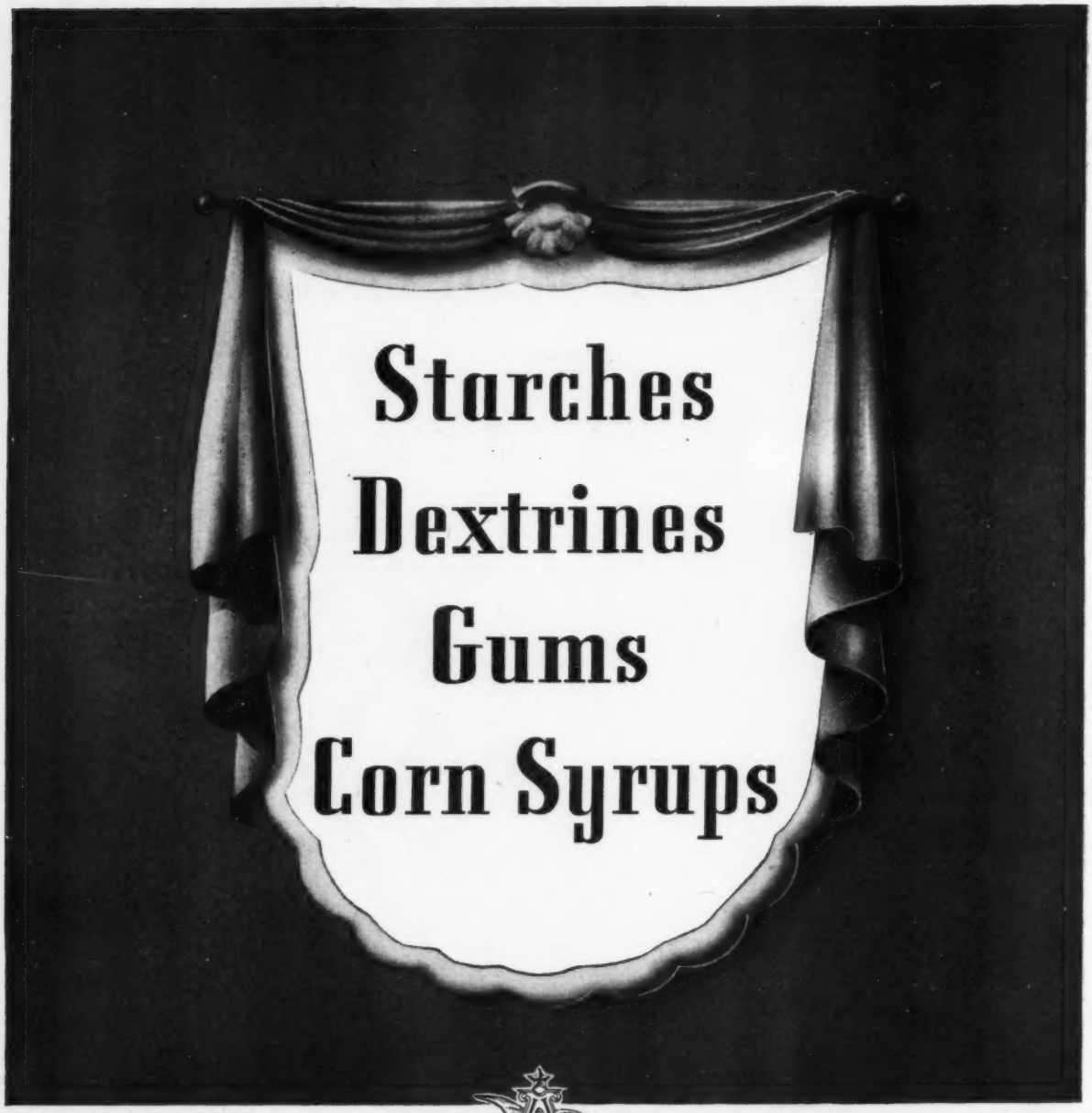


Products offered by Anheuser-Busch to the American paper industry have been produced to meet specific industry requirements. Backed by research and practical "know how", their uniform performance and dependable quality have built an enviable reputation throughout the industry. Write us for further information.

Corn Products Department

ANHEUSER-BUSCH, INC. · SAINT LOUIS, MO.

VESSEL DIVISION

NEWS

75th ANNIVERSARY 1876 - 1948

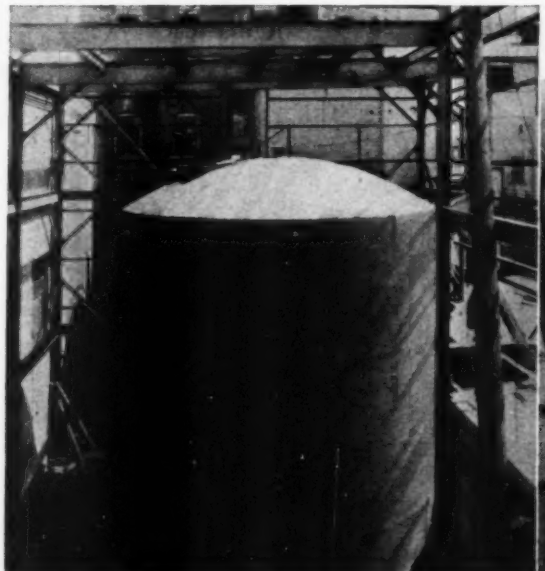
A.O.Smith

CORPORATION

New York 17 • Philadelphia 3 • Pittsburgh 19 • Atlanta 3 • Chicago 4
Tulsa 3 • Dallas 1 • Houston 2 • Seattle 1 • Los Angeles 14
International Division: Milwaukee 1

FROM MIDGETS TO GIANTS range the size of pressure vessels and welded structures manufactured in A. O. Smith Vessel plants. To the left is part of an order for 2 ft. dia. x 80 ft. long storage tanks. Below are four huge lined coke drums, 16 ft. dia. by 91 ft., being manufactured simultaneously.

FORERUNNER OF THE FUTURE—Alloy-lined steel acid-storage tanks, like the one shown below, manufactured by A.O. Smith for the paper industry, are replacing existing wooden tanks, which have a limited life. A.O. Smith manufactured the first alloy-lined steel acid-storage tank ever made.



A. O. SMITH IS A LEADER in manufacturing plain carbon steel and corrosion-resistant pressure vessels. This A.O. Smith Vacuum Column, partially lined with type 405 stainless steel, combines extensive knowledge of both types of manufacture.

NEW BULLETINS: Write the nearest A. O. Smith office listed above for these new Bulletins: V-44—Field Assembly of Pressure Vessels; V-46—SMITHway Vessels, Alloy, Alloy-Lined, Clad, and Glass-Lined.

HOW
TO UTILIZE
YOUR BARK
AND MILL REFUSE
PROFITABLY!
NEW MACHINE
CONVERTS WASTE INTO PROFIT
Have you wondered how to get dollars from that soggy bark pile or useless knots and screenings?
The best answer to your problem is the new FULTON PRESS just perfected by the Fulton Iron Works Company, makers of fine processing and extraction equipment since 1852.
It (1) DE-WATERS and (2) REDUCES bark, knots and screenings, and mill waste in one operation—making your bark or wood mill refuse a more efficient fuel or more easily processed by-product—prepares your knots and screenings for redigestion or refining.
WANT PROOF? send us samples for processing
We will gladly process samples of your waste material free of charge.
Exhaustive tests indicate that the FULTON PRESS will give you results never before possible with conventional equipment. Whatever your requirements, we believe the FULTON PRESS will meet them economically, efficiently and with unprecedented freedom from heavy maintenance.
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SAINT LOUIS 14, MISSOURI
New York Office 82 Wall Street New York 5
MAKERS OF FINE PROCESSING AND EXTRACTION EQUIPMENT SINCE 1852

Speed PRODUCTION Reduce OPERATING COSTS

More and more leading paper mills are using Yarway Motor-Operated Digester Valves on the blow lines from pulp digesters to blow tanks.

Economy and speed of operation are two main reasons.

The famous Yarway *Seatless* principle assures a *tight* valve—effectively sealing off the digester, preventing loss of black liquor, increasing number of cooks per day. The simple push button motor control at top of digester means speed.

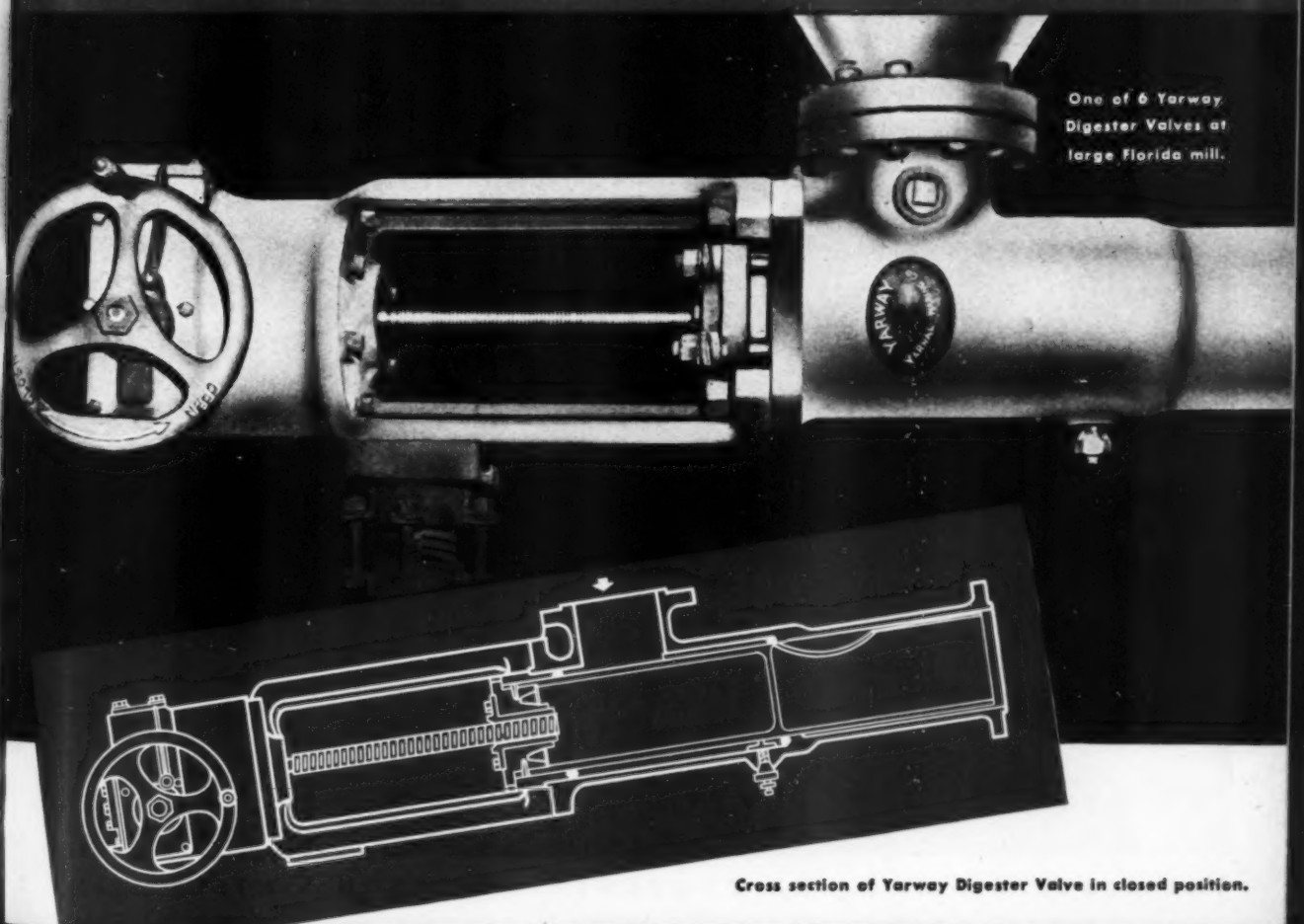
Metallurgical advancements also permit Yarway Digester Valves to withstand the pressure, shock and chemical action always encountered in this service.

In one mill, Yarways increased production 1½ to 2 cooks per day while reducing operating supervision. Another reports maintenance is lower than on any other type of valve for this service.

WRITE FOR NEW CATALOG NO. 440

YARNALL-WARING COMPANY
149 Mermaid Avenue, Philadelphia 18, Pa.

WITH YARWAY *SEATLESS* DIGESTER VALVES



One of 6 Yarway Digester Valves at large Florida mill.

Cross section of Yarway Digester Valve in closed position.

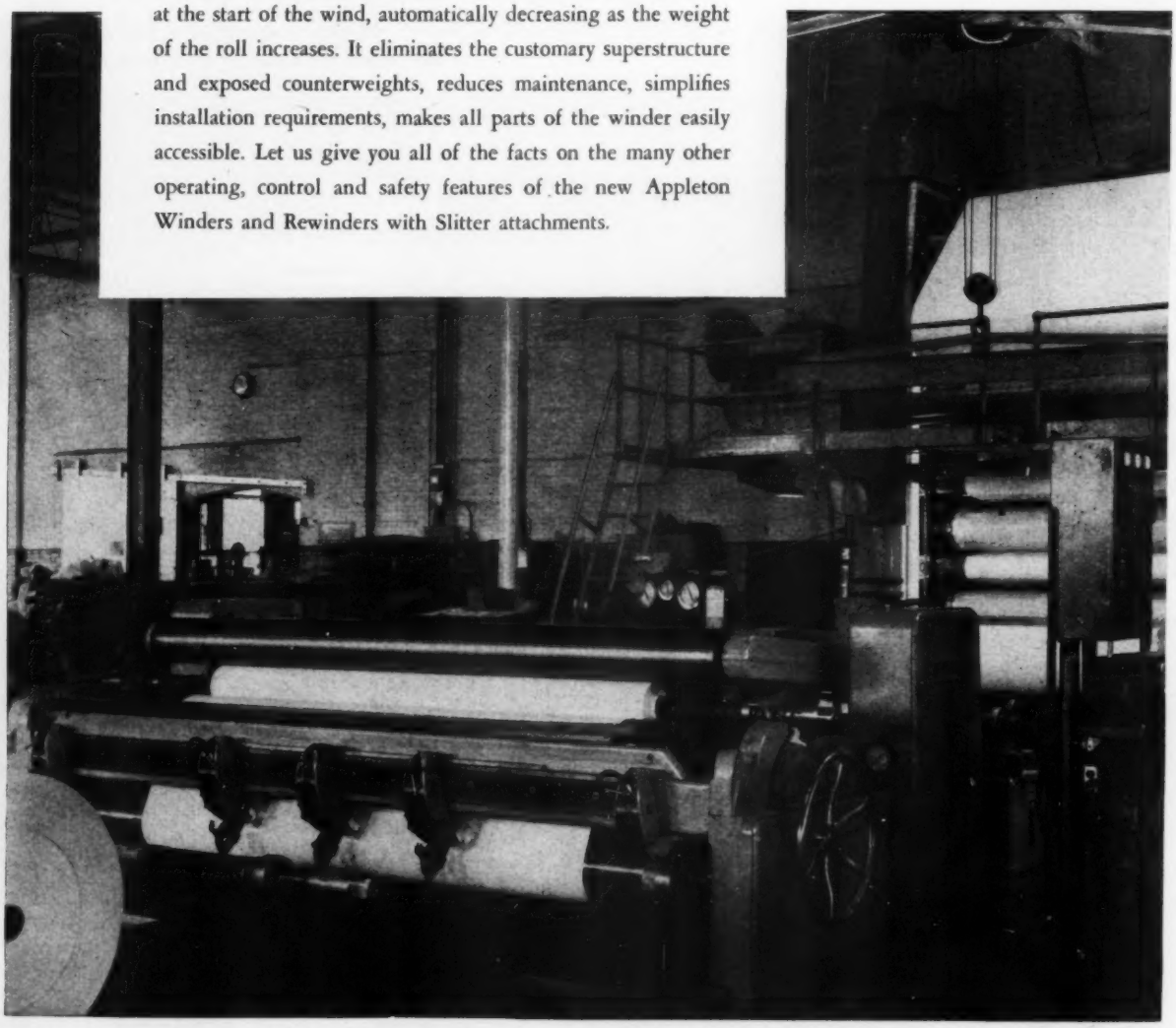
YARWAY BLOW-OFF VALVES

APPLETON WINDERS & REWINDERS

You'll find many new features in Appleton Winders and Rewinders • features that help speed up production and eliminate many manual operations • that provide easy and accurate control and adjustments • smooth, quick speed changes • uniform winding • easy threading • clean cut slitting with pneumatic knife pressure and release • hydraulically operated roll ejector • • • in fact, all of the features that mean dependable, easy, safe precision winding and slitting at speeds in line with modern production schedules.

with new features for easy Winding of perfect Rolls at modern High Speeds

The new swinging-arm riding roll is a unique feature, an Appleton development. It provides a high line of pressure at the start of the wind, automatically decreasing as the weight of the roll increases. It eliminates the customary superstructure and exposed counterweights, reduces maintenance, simplifies installation requirements, makes all parts of the winder easily accessible. Let us give you all of the facts on the many other operating, control and safety features of the new Appleton Winders and Rewinders with Slitter attachments.



THE APPLETON MACHINE COMPANY • APPLETON • WISCONSIN

Eastern U. S. A. and Foreign Sales • CASTLE & OVERTON, Inc. • 630 Fifth Avenue, New York City

A CYLINDER MACHINE VAT SECTION *as long as the height of City Hall, Philadelphia*

Purely imaginative, of course, but it illustrates what all the vats we have built since the end of the war would make if placed side by side. We're conservative in our comparison too, because City Hall, Philadelphia, is 548 feet high to the top of William Penn's hat and the 93 vats would total over 560 feet.

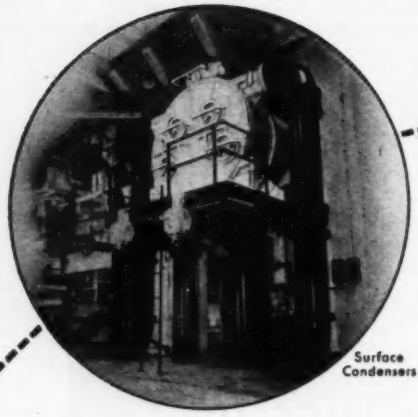
Some of these Downingtown PROFLOW and CONFLOW Vats are for complete machines, making sheets calipering from 9 to 50 points, and the caliper being held to plus or minus ½ point and the weight held to within 2 to 4%. Others are for new liner vats on old machines, to improve coverage with minimum liner usage. Altogether, the vats made, or were added to, a total of 23 machines, one being the "World's Largest Combination Felt and Liner Board Machine" with 10 vats, other big machines being three with 8 vats and three with 7 vats. These 93 vats were built in every possible type of construction.

With our wealth of MODERN cylinder machine designing and building experience at Downingtown, a talk with one of our engineers may convince you that *"you cannot afford to do without the equipment you think you cannot afford to buy right now."* Your problems of quality and production can be discussed and the solution recommended. Call on us.

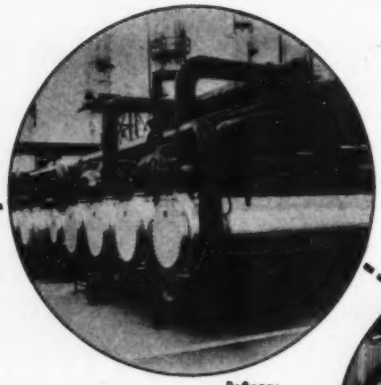
DOWNINGTOWN MANUFACTURING COMPANY

DOWNINGTOWN, PA.

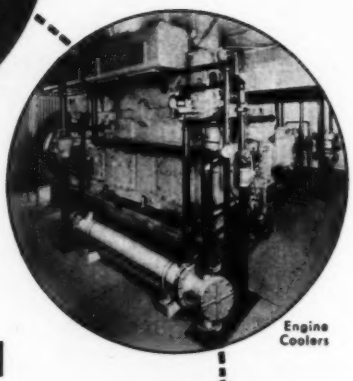
DESIGNERS AND BUILDERS OF PAPER MAKING MACHINERY SINCE 1880



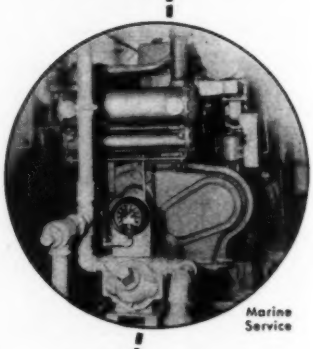
Surface Condensers



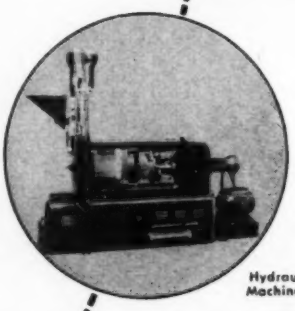
Refinery Exchangers



Engine Coolers



Marine Service



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For Your Own Use, Or On The Machines You Make To Sell

YOU'LL GET JOB-MATCHED PERFORMANCE FROM THESE STANDARDIZED EXCHANGERS

For a big 27,000 sq. ft. surface condenser down to a little 2-inch oil cooler, Ross standardization today means new highs in job-matched performance and new lows in unit costs.

You may be outfitting a power plant, a petroleum refinery or a chemical plant requiring large capacity heat exchanger equipment . . . or you may be selecting smaller exchangers as accessories for the Diesels, compressors or hydraulic equipment which you use or make for sale to others. Neither the size, nor the type of service, nor the operating conditions present a challenge to Ross standardization . . . for Ross has standardized *successfully* on practically everything that is required in heat exchanger equipment.

This means, naturally, that the time-robbing, cost-mounting aspects of custom fabrication are avoided wherever Ross standardization suffices . . . and it more than suffices in most instances. But, where it doesn't, you still have available the industry-leading experience in special engineering and custom fabrication for which Ross has been known some 30-odd years.

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EXCHANGERS... *MAKE OTHER PRODUCTS BETTER*

★ **PREVIEW ROSS STANDARDIZATION** by requesting free Bulletin 4300, then review it with a Ross engineer who will gladly consult. ROSS HEATER & MFG. CO., INC., Division of American Radiator & Standard Sanitary Corp., 1430 West Ave., Buffalo 13, N. Y. In Canada, Horton Steel Works, Ltd., Fort Erie, Ont.

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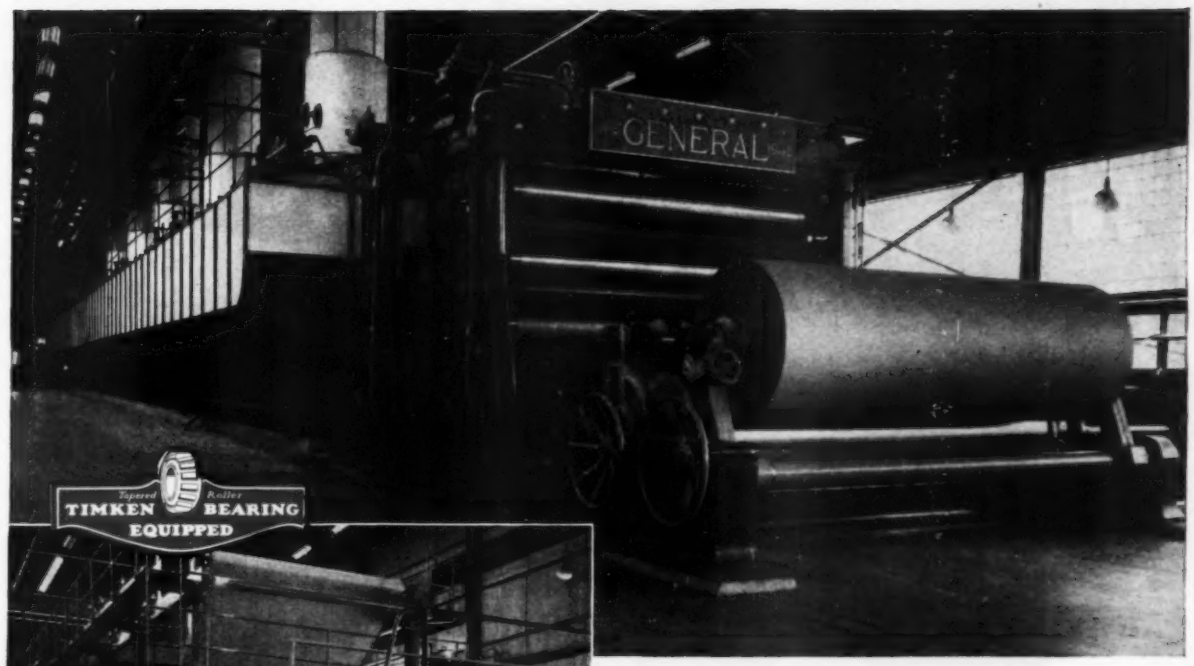

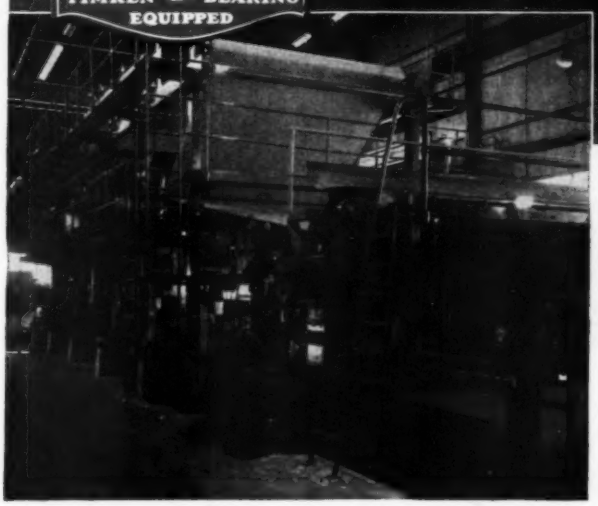

FAIRFIELD'S "GENERAL" USES 310 TIMKEN® BEARINGS

Known as the "General", after General George A. Custer, a relative of the Custer family associated with the mill, this big 146", 5-cylinder board machine is now in full operation at the Fairfield Paper and Container Company's mill, Baltimore, Ohio. It has capacity to produce 150 tons of test liner and chipboard per day.

The machine was designed, built and installed by The Black-Clawson Company, Hamilton, Ohio. The stock preparation equipment consists of a complete Hydrapulper Filler system and Hydrapulper-Hydrafiner liner system manufactured by the Shartle and Dilts divisions of Black-Clawson.

Equipped with a total of 310 Timken tapered roller bearings throughout, the machine is well protected against friction; wear; radial, thrust and combined loads; and misalignment of moving parts. Power is conserved; lubrication is simplified; maintenance is reduced.

For more and better paper at less cost, make sure you have Timken bearings in all kinds of paper mill equipment.

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TAPERED ROLLER BEARINGS

THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO
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NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST ⊣◫⊢ LOADS OR ANY COMBINATION ✳

Announcing New GOULDS

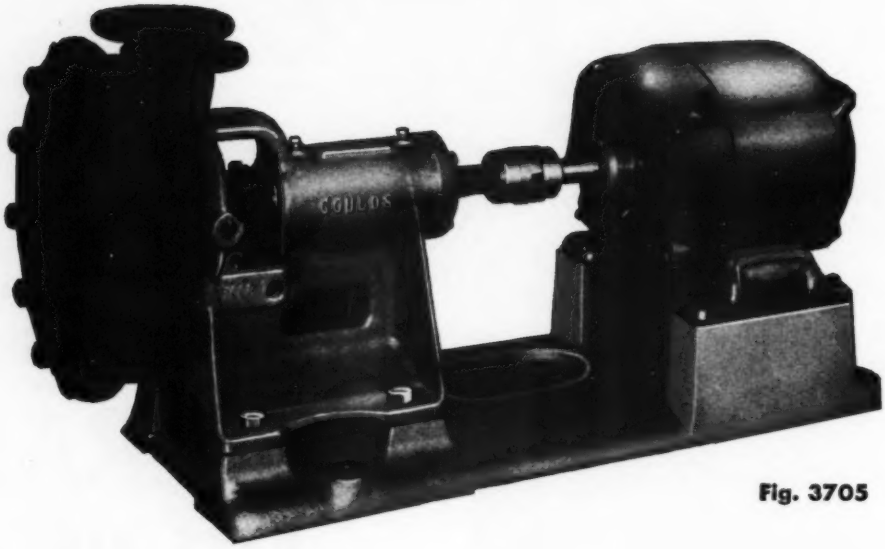

Fig. 3705

Outstanding service in handling corrosive liquids — *Goulds Stainless Steel Centrifugals*

Goulds Fig. 3705 Stainless Steel Centrifugals represent the last word in advanced pump design. Goulds Pumps, Inc., pump specialists for over 100 years, developed these pumps to give efficient, dependable service in the handling of corrosive liquids—at low cost.

Capacities up to 750 G.P.M.

Goulds stainless centrifugals are made in 8 sizes to cover all the usual requirements encountered in the process and other industries for handling corrosive liquids. Capacities range up to 750 G.P.M. with heads up to 180 ft., depending on capacity.

See this pump on display at our exhibit at the 22nd Exposition Chemical Industries, Grand Central Palace, New York, from November 28th to December 3rd. Booth 625.

Built for tough service

Goulds new stainless steel centrifugals are as simple as engineering ingenuity can make them. Every part that goes into these pumps is rugged enough to give you a large safety factor and long life—but there has been no wastefulness of expensive metals.

When you see the performance curves you will see that efficiency is high.

These stainless steel pumps are built for tough, twenty-four-hour service under the most exacting conditions.

MAIL COUPON FOR *FREE* COPY OF BULLETIN 725.3 GIVING COMPLETE DETAILS ON GOULDS STAINLESS STEEL PUMPS

Stainless Steel Pumps...

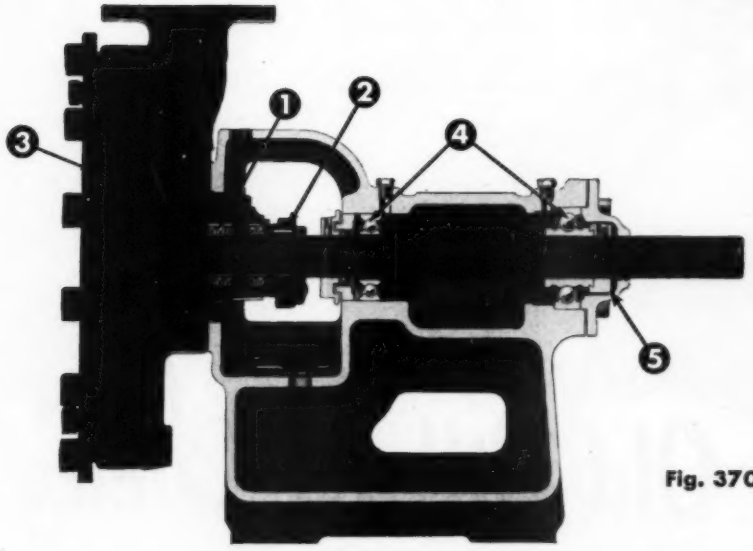

Fig. 3705

Outstanding economy in design and performance

Check these design features

1. Stuffing box under suction pressure only—This assures long packing life and freedom from excessive leakage.
2. Cowl type stuffing box gland split on 45° angle —Easy to disassemble. Single and double mechanical seals also available.
3. Piping connections in casing—You can inspect or clean pump by removing casing cover without disturbing connections. You may also remove impeller in the same way.
4. Bearings Prelubricated and fully protected from liquids pumped.
5. Can be adjusted for wear—If wear eventually occurs between impeller vanes and casing, you can adjust clearance using outboard bearing locking collar.

Materials of construction

Fig. 3705 is stocked in No. 316 and FA 20 stainless steel. Can be furnished in other metals or alloys to suit conditions of service. See Bulletin for complete specifications.

Interchangeable parts

Goulds paid particular attention to using interchangeable parts. You will need fewer spare parts for this new pump. See Bulletin for interchangeability chart.

MEMBER

For complete information on this advance design Stainless Steel Pump send coupon for FREE Bulletin.

GOULDS PUMPS INC.
Dept. PI, Seneca Falls, N. Y.

Please send your FREE Bulletin.

Goulds PUMPS INC. Seneca Falls New York

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COMPANY_____

STREET_____

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Poor Old Bill AND Lucky Joe

Bill is a good worker. He made big wages while paper was in short supply. His mill is down now. Bill is laid off. Poor old Bill!

Joe is a good worker, too. He makes steady wages all year round. Never heard of a buyer's market. He doesn't have to worry. Lucky Joe!

There are too many "poor old Bills" among employees of high-cost mills—and slow drying makes high costs. Too much water remains in the sheets after they leave the presses. Too much heat is needed at the drier rolls. When machines go slow costs go up—and mills go down.

There are plenty of "Lucky Joes", too. They work at low-cost mills where presses are equipped with Hamilton Felts. There is not much water left in the sheets by the time they reach the driers. Little heat and little time needed to finish them. Machines go fast—costs go down and pay-rolls go steady.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

Miami Woolen Mills

Hamilton Felts

Established 1858

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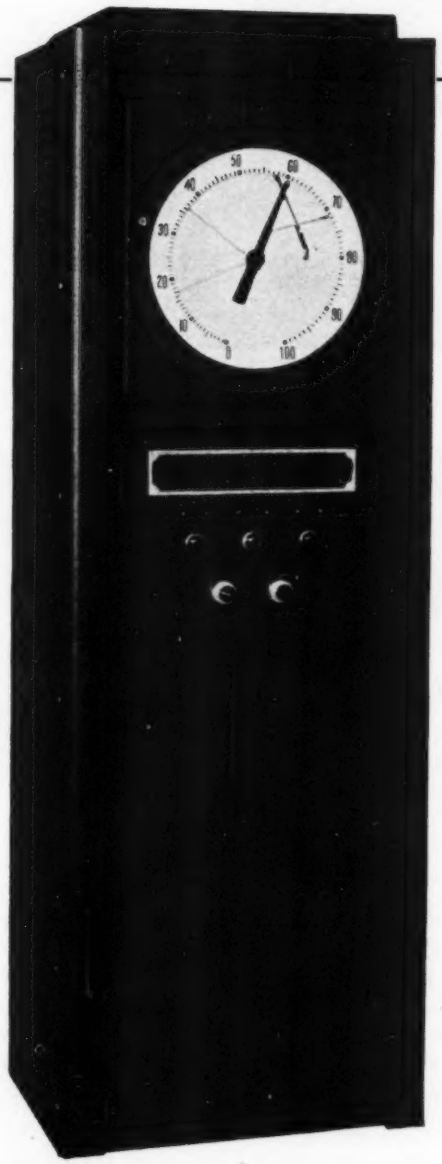
with letters, phone calls and requests to our field engineers



Here's the *ElectroniK*

Moist-O-Graph

Paper manufacturers from every point of the compass have been demanding this new, improved Moist-O-Graph . . . incorporating the famous *ElectroniK* Potentiometer in circular chart form. And here it is . . . ready to continue the pace-setting performance of its mechanical counterpart in 64 installations made since the war.

The *ElectroniK* Moist-O-Graph provides the means for producing consistent moisture content with substantial savings in steam, manpower and machine shut-downs . . . all so very important in the search for lower operating costs.

In addition to signaling and recording, this instrument is now available as an automatic controller . . . to regulate dryer conditions and maintain desired moisture content.

This is the news you have been waiting for . . . call in your local Honeywell engineer for further information!

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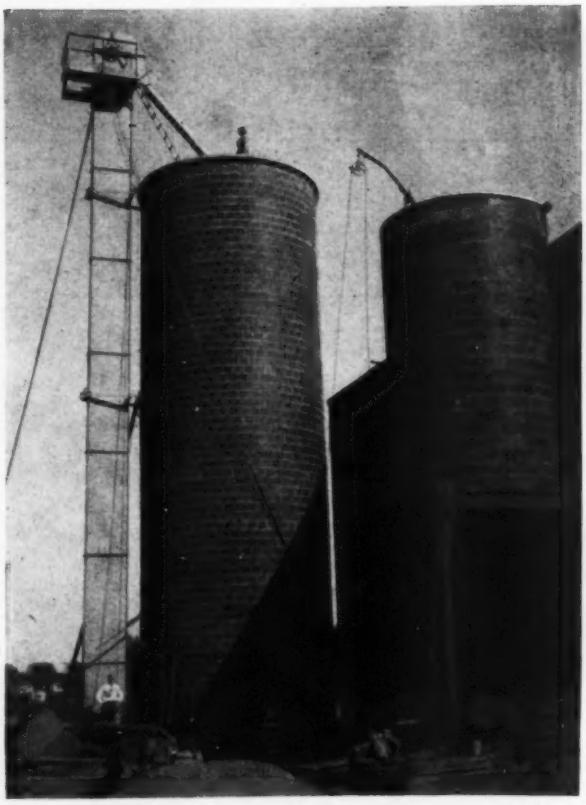
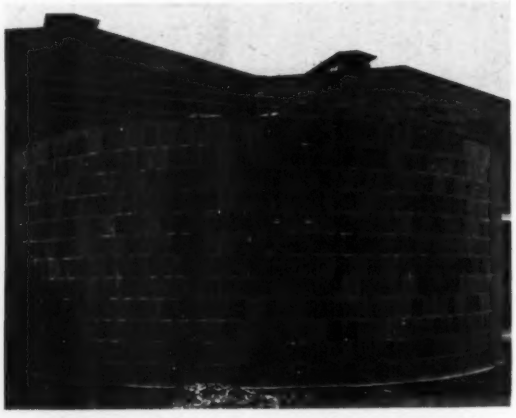
Whatever your tank and silo needs get a quotation from KALAMAZOO



Coal and ash silos nearing completion at Veterans Hospital, Saginaw, Michigan. Glazed tile is ideal for permanent, maintenance-free storage buildings of all kinds.



Settling tank for the water purification system of the Schmidt & Ault Paper Company, York, Pa. This glazed tile tank is 12' high, 30' in diameter.

(Above) Exterior view of chest recently completed for one of the large paper mills. Note clean finish.

(Right) Interior view of same horizontal chest, showing propeller agitator. Tile is clean and permanent—yet costs no more.

Workmen putting the finishing touches on wood inlet box for large Southern mill.

Kalamazoo glazed tile tanks, chests, and storage buildings—designed and erected by Kalamazoo experts—are the perfect answer to the specialized building problems of the paper industry. They are clean—and easily kept clean. They rarely require maintenance attention. They outlast any other type of construction—yet cost no more. When you need new construction—particularly where water or chemicals are involved—write for recommendations.

KALAMAZOO TANK and SILO COMPANY

910 Harrison Street, Kalamazoo, Michigan

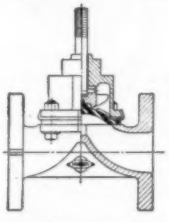
COMPLETE ENGINEERING AND ERECTION SERVICE

NEW! Grinnell-Saunders Diaphragm Valves *power operated* by Bendix-Westinghouse Rotochambers

dependable power operation and remote control

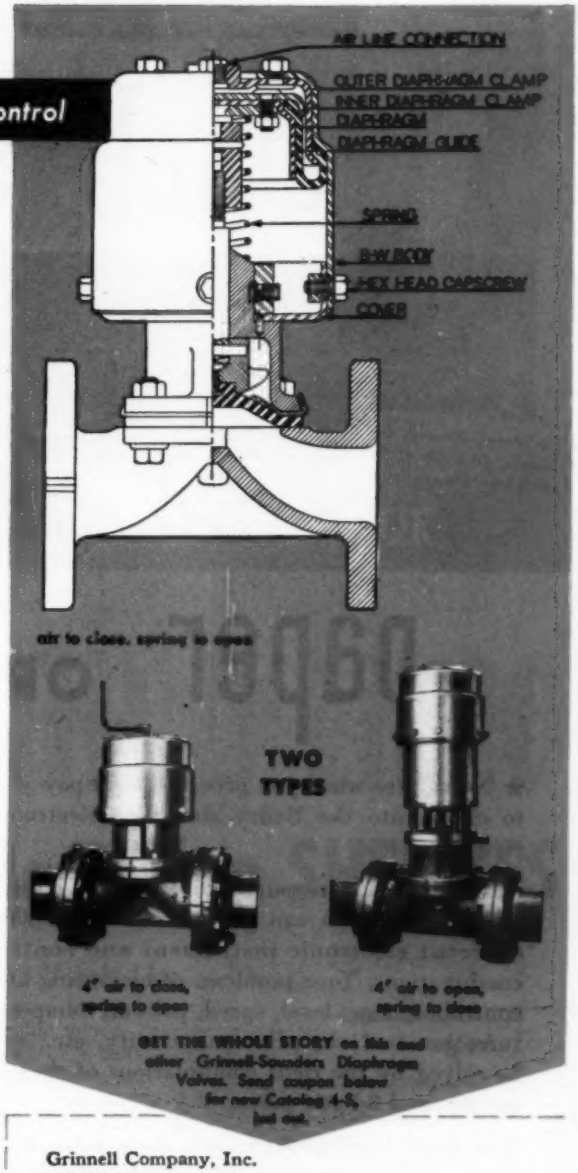
FEATURES:

- Bendix-Westinghouse Rotochamber top-works has rolling sleeve type of seal . . . leakproof and practically frictionless. No packing glands and no lubrication required.
- Pressed steel cylinder is neat looking, light and compact. Height of 2" flanged air-to-close valve from center line to top is only 9¾"; air-to-open valve (in open position) is 14⅛".
- Bendix-Westinghouse top-works has been tested up to seven million strokes without any sign of wear or failure.
- Top-works may be operated with air or hydraulic pressures up to 105 pounds. For pressures up to 100 pounds in the line being controlled, an actuating pressure of only 50 pounds is required under average conditions. Pressure reducing valves are not required for pressures up to 105 pounds because of adjustable stem travel stops incorporated in the valve bonnet design.
- Adjustment is easily made without removal of top-works from valve body.



Sliding stem bonnet assembly is suitable for use with other valve motor units. Sliding stem bonnets are interchangeable with other bonnet designs.

YOU GET THESE ADVANTAGES IN ANY GRINNELL-SAUNDERS DIAPHRAGM VALVE: Diaphragm isolates working parts from the fluid, preventing corrosion of these parts and contamination of the fluid; diaphragm opens wide for streamlined flow; diaphragm presses tight for positive closure, even with suspended solids in the line; body, lining and diaphragm materials to meet service conditions; simple maintenance.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SPRING
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air to close, spring to open
TWO TYPES
4" air to close, spring to open
4" air to open, spring to close
GET THE WHOLE STORY on this and other Grinnell-Saunders Diaphragm Valves. Send coupon below for new Catalog 4-S, just out.

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Please send me a copy of your new Catalog 4-S of Grinnell-Saunders Diaphragm Valves.

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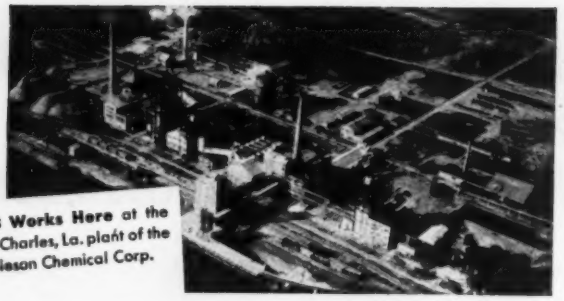

4+8 Works Here at the Lake Charles, La. plant of the Mathieson Chemical Corp.

4+8 Works Here at the Kodak Park plant of Eastman Kodak Co., Rochester, N.Y.

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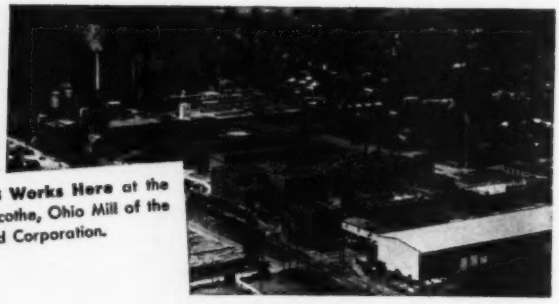
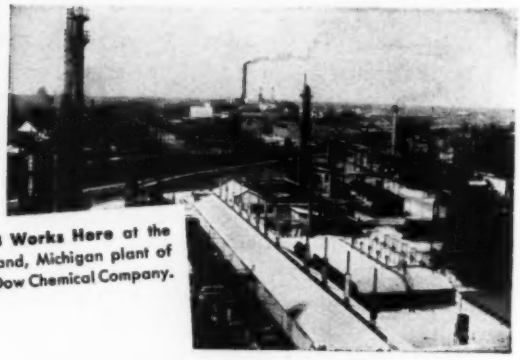


4+8 Works Here at the Chillicothe, Ohio Mill of the Mead Corporation.



4+8 Works Here at the Midland, Michigan plant of The Dow Chemical Company.

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With four basic circuits and eight basic component parts you can get more than 100,000 different electronic instrument and control combinations. Your problems of measuring and controlling flow, level, speed, pressure temperature, gas analysis, pH, conductivity, etc., can be solved by the right combinations of these 4 circuits and 8 basic parts.

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Bulletin No. 17 will show you how easy it is to install and use Bailey electronic controls. Write for your copy today.

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P-20

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Controls for the Process Industries

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With *Easy-to-Align* Magic-Grip SHEAVES

YOU CAN MOUNT a *Magic-Grip* sheave faster than any other sheave you can buy . . . and demount it just as fast. To mount, simply slide the sheave onto the shaft and tighten three screws. To demount, use the screws to break the grip of the tapered bushing and the sheave can be slid off easily.

You save time and eliminate the danger of damaged bearings and shafts from forcing and hammering. A hex socket wrench is the only tool needed and anyone can line up the sheave perfectly. Sizes 1 to 250 hp.

Most Complete V-belt Line

Get everything you need for your V-belt drives from one reliable source. *Texrope* offers the broadest line of V-belts, standard and variable-speed sheaves and speed changers plus the extra engineering skill that comes from more industrial V-belt installations in operation than any other manufacturer.

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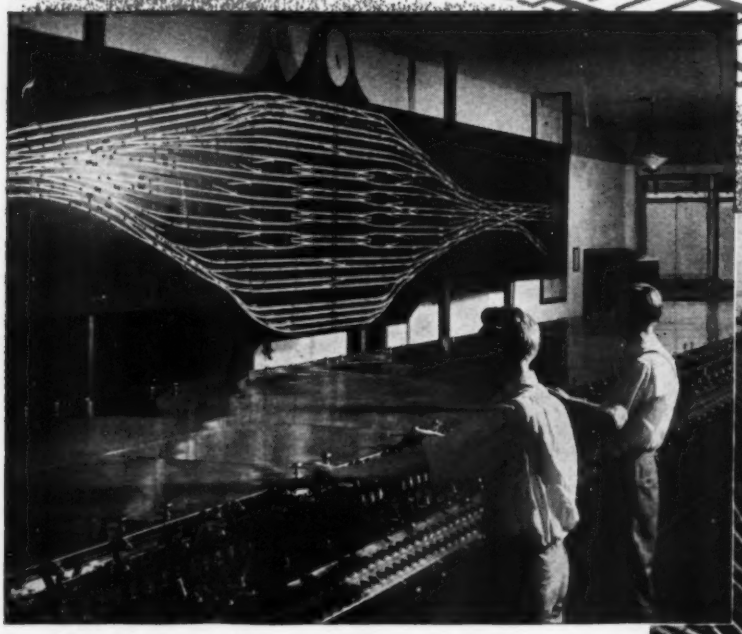
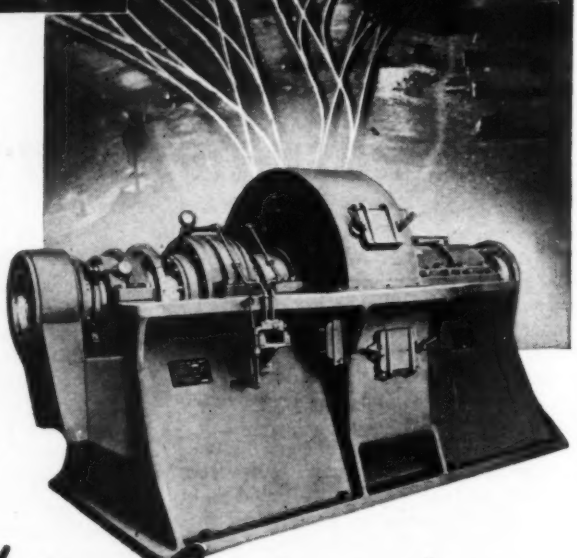
Switching Grades as Easy with a SUTHERLAND as switching trains . . .





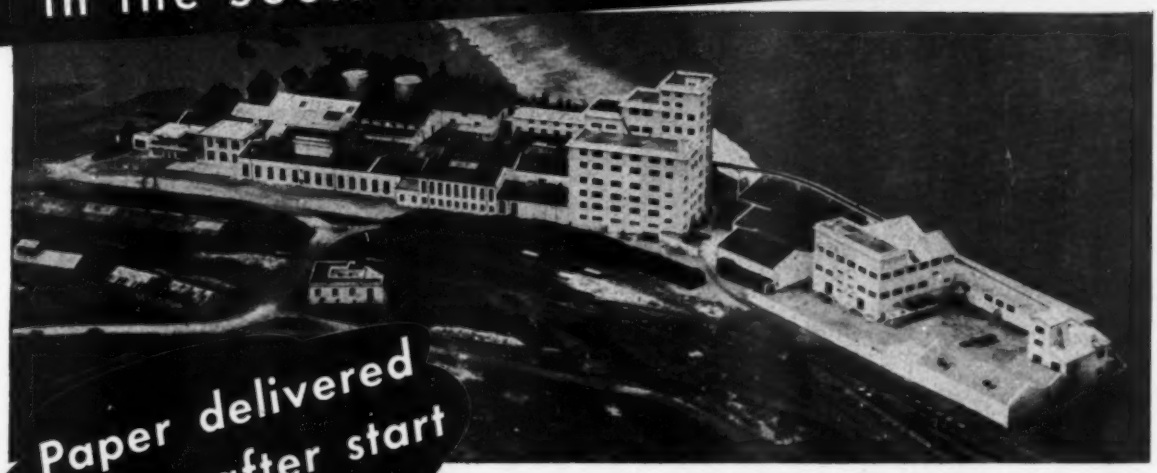
One Sutherland recently started up on a kraft specialty machine and during its first week of operation ran 28 grades, these covering a wide range. Sheets were all better formed and showed more uniformity in test. Higher tear was produced with equal or greater mullen; also, tear was much closer together in both directions. All this, of course, with the usual Sutherland power savings. . . . Other Sutherlands are operating on sulphite and sulphate machines.

REMINDER—Don't think for one minute that Sutherlands apply only to large, one grade machines. We can prove that anyone can "Save with Sutherlands." Write us.

Sutherland Refiner Corporation

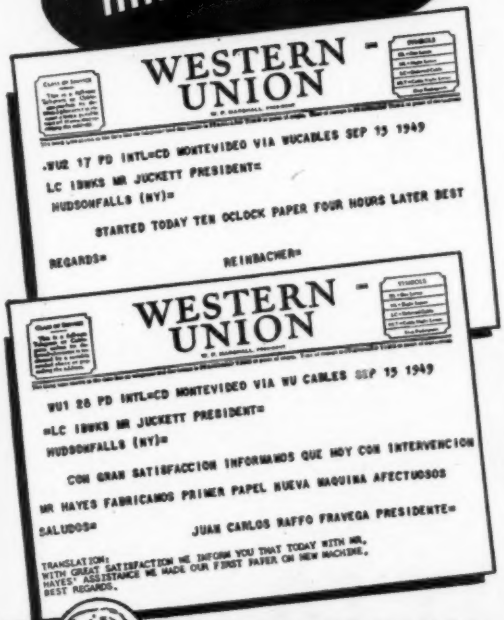
TRENTON, NEW JERSEY *Manufactured in the United States by Valley Iron Works Co., Appleton, Wisconsin*
Sutherland Refiner Limited, Windsor Hotel, Montreal, P. Q.

Sandy Hill Establishes a New Record in the South American Paper Industry



Plant of Fabrica Nacional de Papel in Montevideo, Uruguay. An additional machine (Number three) with process layout and equipment was supplied by The Sandy Hill Iron & Brass Works.

Paper delivered 4 hours after start of complete new mill installation!



WESTERN UNION

.WUI 17 PD INTL=CD MONTEVIDEO VIA NUCABLES SEP 15 1949
LC IBWKS MR JUCKETT PRESIDENT=
HUDSONFALLS (NY)=
STARTED TODAY TEN OCLOCK PAPER FOUR HOURS LATER BEST
REGARDS= REINBACHER=

WESTERN UNION

WUI 26 PD INTL=CD MONTEVIDEO VIA WU CABLES SEP 15 1949
=LC IBWKS MR JUCKETT PRESIDENT=
HUDSONFALLS (NY)=
CON GRAN SATISFACCION INFORMAMOS QUE HOY CON INTERVENCION
MR HAYES FABRICAMOS PRIMER PAPEL NUEVA MAQUINA AFECTUOSOS
SALUDOS= JUAN CARLOS RAFFO FRAVEGA PRESIDENTE=

TRANSLATION:
WITH GREAT SATISFACTION WE INFORM YOU THAT TODAY WITH MR. HAYES' ASSISTANCE WE MADE OUR FIRST PAPER ON NEW MACHINE.
BEST REGARDS.

FNP
EL SAUCE

Destined to be one of the world's largest producers of fine paper from bleached straw, the Fabrica Nacional de Papel mill has started operation of a new modern unit at Montevideo, Uruguay, with a record breaking accomplishment! A starting time of four hours is very nearly record after small changes in a paper mill, and is probably an all-time record for a completely new mill installation.

In addition to the design and layout of the paper machine, Sandy Hill engineers made complete plans for the basement, for the auxiliaries and for all phases of the mill piping system. The material shipped from Sandy Hill and its suppliers and loaded onto ships in New York harbor would have filled 40 freight cars.

Sandy Hill equipment used in this installation include a Sandy Hill-Bertrams Flow Control System, Bertrams Shake, Sandy Hill-Spencer Electrical Dandy Roll Drive, Sandy Hill Open Side Calender Stacks, Pope type Constant Speed Reel, Selective Drive and Sandy Hill-Scofield Felt Conditioning equipment.

The starting of this modern, highly efficient equipment for manufacturing straw into fine paper marks a significant milestone in the further rapid development of the paper industry in South America and another triumph for Sandy Hill paper mill engineering.

Sandy Hill Iron & Brass Works

Hudson Falls, N. Y.

Machinists and Founders Specializing in Paper and Pulp Mill Machinery

Some Leading Items:
Fourdrinier Paper Machines
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Bertrams Flow Distributor
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Pulp Grinders
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THE PAPER INDUSTRY
and PAPER WORLD
NOVEMBER 1949

Editorial

Do the Signs Point to a Second Recession?

▶▶▶ THE OPINION OF both the Department of Commerce and the Federal Reserve Bank is that "economic activity moved forward in September with a better than average seasonal performance."

Even paper and board operations averaged 94.6 per cent of capacity during the first week of October as compared with the July low of 72.2 per cent—all testifying to the fact that we were making very good recovery from a ten-month recession.

Yes, we were on our way to bigger, better business, and then—

On September 19, John L. Lewis issued a mandate that brought down a coal strike upon the country.

Phillip Murray stole the show on October 1 with a steel strike.

Now November is here and the long, heavy paralyzing forces in inaction and inequity are slowly creeping over the entire national economy.

Settlement has been made by one leading steel company; there have been some parleys on the coal front. As this is written, some prognosticians are that both of these great and powerful forces are prepared for a long battle. They could be wrong, and we could even hope that when you read this you will say: "Hm . . . don't they know those strikes are over"?

Regardless of the outcome—and when—these strikes already have left their mark; the momentum we had gained has slackened. Anxiety has been aroused. Questions are being asked "Is business headed for another deep freeze"? . . . "Will there be another recession, a depression—or a panic"?

Let's consider, at this point, the definitions of that skid symposium. In a political economy class at McGill University, a student once asked Stephen Leacock: "Professor, what is the difference between a recession, a depression, and a panic"?

Th Professor replied: "It is all a matter of degree. A recession is a period in which you tighten your belt. In a depression, you have no belt to tighten, and when you have no pants left to hold up, it's a panic."

Another question: "Will we have a second recession"? If so, will the added aftermath of strike fatigue bring us to a depression?

We think not! And for good reason. Our free enterprise system is fully intact and functioning in a big way because it is sound and truly economical. The attacks upon it are purely political. We resisted those attacks, defeated them, and made a good comeback. And last—and best—is the patent fact that the American people do not want a welfare state. They are very much alive to the subversive tactics of those who seek to impose it upon them.

In addition, the American people have instantly before them the pitiful exhibition of how the economy of a vast empire can be wrecked by a Labor-Socialist welfare state erected upon chimerical promises that are now crumbling under the ghastly stupidities of its present political leadership.

They are facing the "panic" which Professor Leacock so aptly defined.

To paraphrase the old slogan of one of the Empire's constituents, it is not "Erin go Bragh!" but "Britain gone britchesless!" Is it any wonder then that there is no demand in Britain for belts?

The American people want no part of a welfare state. Their well seasoned judgment is to maintain the everlasting integrity of their incomparable free enterprise system—*the prize economic system of the ages.*

Yes! We shall all wear belts during the days ahead. We may have to tighten them a bit, but that is better than being left—like the British—without pants to hold up.

▼

After Thirty Years—

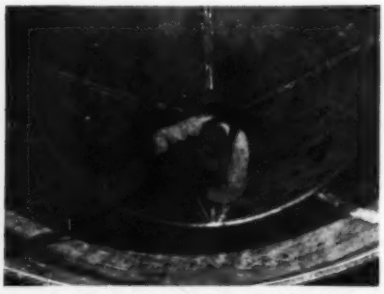
▶▶▶ THE ORIGINAL TITLE OF this old established publication will be resumed with the January (1950) issue; thereafter it will be known as THE PAPER INDUSTRY.

Through the thirty years of its combined qualitative and quantitative service to all related interests in the paper and pulp manufacturing industry, this publication has not faltered. It has not failed to fulfill the natural demands that have arisen from the progress of its readers and advertisers for enlightenment and information.

Since June, 1939, this magazine has been known as THE PAPER INDUSTRY AND PAPER WORLD. This title was assumed following a consolidation of the comparatively

(1) One of the digester plates is marked from a template.

(2) The shell plates are rolled to form the cylindrical shell. One longitudinal weld is already completed. The edges of the plates have been prepared for the welding of the other longitudinal seam.



(3) An inside seam of the digester bottom is welded. Stainless clad steel was used for making part of the digester.

(4) The digester is erected inside the building. Six separate sections were assembled by field welding.

This Digester

has what it takes for pulp mill service

It's "tailor-made" to solve a corrosion problem

The southern mill where this 12-ft. diam. by 33 ft. 1 in. sulphate digester is installed uses a hot caustic solution to make pulp from pine chips. To withstand this corrosive service, the digester is made of 10 per cent type 347 stainless clad steel. Another digester of similar design was fabricated the same way.

It's "form-fitted" to solve an erection problem

Both this and its companion digester had to be erected *inside* an existing building. The problem was overcome by fabricating each digester in six separate sections in the shop. These digester sections were then assembled and welded in place in the field.

This example demonstrates our ability to handle special as well as standard fabricating and erection assignments. The equipment we furnish the paper industry includes diffusers, spherical acid accumulators, pulp washing tanks, flat-bottom storage tanks, and elevated water tanks. We have special facilities for X-raying and stress-relieving pressure valves according to code requirements. Prompt service to the paper industry is assured because of the strategic location of our four plants. The next time you need steel plate structures, contact our nearest office for an estimate on process equipment that "has what it takes."

(5) Positioning of the top head. This head was then welded to the body of the digester to finish field assembly.

CHICAGO BRIDGE & IRON COMPANY

Atlanta, 3.....2143 Healey Building
Birmingham, 1.....1511 North 50th Street
Boston, 10.....1026—201 Devonshire Street
Chicago, 4.....2445 McCormick Building
Cleveland, 15.....2267 Guildhall Building
Detroit, 26.....1566 Lafayette Building
Havana.....402 Abreu Building
Houston, 2.....2143 National Standard Building
Los Angeles, 14.....1559 General Petroleum Building
New York, 6.....3350—165 Broadway Building
Philadelphia, 3.....1653—1700 Walnut Street Building
Salt Lake City, 1.....1527 First Security Bank Building
San Francisco, 11.....1217—22 Battery Street Building
Seattle, 1.....1327 Henry Building
Tulsa, 3.....1651 Hunt Building

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, PA. In Canada: HORTON STEEL WORKS, Limited, FORT ERIE, ONT.

young pictorial newsmagazine and the original educational journal which was established in April, 1919.

Subscribers and advertisers alike have suggested that the use of the more simple, nevertheless compendious, title of THE PAPER INDUSTRY be resumed. We have thought it over and have decided to do so.

Both readers and advertisers have made favorable comments on the progressive trend of our editorial service. New features are in the making for the coming year. *Technology, Engineering, Management,* and *Production* will continue to be the four corners of our publication structure.

▼

Other Fellow's Problems

▸▸▸ A RECENT ARTICLE IN the *American Pressman* urged printers to visit a paper mill to find out how paper is made and to gain an appreciation of the techniques involved in producing printing papers.

It is even more important that the papermaker and technologist visit the print shop as well as the plants of other types of paper users. By so doing, they can learn the problems involved in the use and application of their product. A better understanding of the reasons behind bald specifications should enable the papermaker to visualize more readily the difficulties encountered when low quality paper is sent to the customer.

Mutual understanding, of course, works both ways. Closer co-operation between the printer or converter and the papermaker should result in more realistic specifications that provide satisfactory quality for the consumer and that can be achieved readily by the papermaker. In these days of stiffened competition, there is no substitute for high quality.

▼

Safety Starts at the Top

▸▸▸ THERE IS NO MAGIC formula for reducing accidents. A review of case histories of mills that have achieved good safety records shows invariably that plant safety results from a concerted and co-operative effort by plant management, supervisors, and workers. No single person or group can do the job alone.

While contests of various kinds, training programs, and numerous publicity devices help to keep safety in the limelight, the most important single element is management's attitude. Until management puts safety on a par with production and product quality, the cost of preventable accidents cannot be brought down.

The central figure in any safety program, of course, is the supervisor. His attitude toward the safety program is reflected by the attitude and actions of his men. Where the foremen insist on safety as an integral part of any job, and where attention to the elimination of hazards is given prime consideration, the cause of safety receives a real boost. On the other hand, the supervisor can effectively smother any interest by a careless and indifferent attitude. Failure to report minor accidents, ignoring potential hazards and permitting poor housekeeping are the surest ways to an indifferent safety program.

Just as the workers reflect the attitude of the supervisors, so do the supervisors reflect the attitude of the top management. Management cannot discharge its responsibility by mere tacit approval of a safety program. Positive interest and active participation are prerequisites to any successful safety program.

Fortunately, the past few years have seen a decided growth in safety consciousness. One manifestation of this interest is the recent action of The American Paper and Pulp Association and The American Pulp and Paper Mill Superintendents Association in forming a joint committee to promote the cause of safety in our industry. Active participation in promotion by these associations undoubtedly will stimulate greater interest in this work. The program developed by this committee will be an important adjunct to the work of the Pulp and Paper Section of the National Safety Council.

▼

Give to Those Who Gave

▸▸▸ PERSONNEL WORK in these modern times has become almost a science. There are achievement charts and numerous tests that determine a man's fitness for certain kinds of work.

Before the war, physical fitness figured heavily in a man's ability for a job, and any kind of a handicap largely disqualified a man for work around an industrial plant or in factories where many workers were employed.

Since the war, however, many skilled and valuable workers have come through rehabilitation with physical handicaps. Now, business is learning that this great wealth of manpower is needed—it cannot be spared.

A joint survey on this subject was conducted a short time ago by the United States Chamber of Commerce and the National Association of Manufacturers. Companies canvassed were representative of a variety of small, medium, and large concerns in many industrial activities and business, located in most of the 48 states.

Most of the responses expressed satisfaction with the job performance of both the physically handicapped and older workers. Many commented favorably on the stability, reliability, experience, conscientious job application, and similar characteristics typical of these workers. When we count our blessings this Thanksgiving Season, we might remember that the way to keep those blessings is to pass them on. One suggestion is that we resolve to give that army of handicapped people who represent so much talent, skill, and experience, every opportunity to fill certain jobs where their ability can be of the utmost benefit to them and to industry.

Those of us who have not been put to that supreme test of human courage may well learn many lessons from those who gave so much that humanity might be free. Shall we not surround them with every privilege to be truly free men.

BWH
DEPENDABLE RUGGEDNESS
BOSTON WOVEN HOSE & RUBBER CO.
CONCORD
BWH
1. NEW oil, grease and sun-resistant cover. Long wearing, tough, abrasion resistant.
2. Asbestos braid insures maximum cover adhesion, includes new type static-conducting wire.
3. High-tensile steel wire for strength and safety.
4. Heat & oil-resistant tube.

NEW BWH COVER DEFIES "RUBBER EATERS"

RESISTS OIL, GREASE, SUN AND ABRASION DAMAGE

Oil, grease, strong sunlight and abrasion are factors that can't be controlled in many industrial operations. Yet they are all "rubber eaters" that tend to break down covers on steam hose and to shorten its service.

BWH technologists sweated over the problem for many laboratory hours before they developed this new, die-hard, synthetic rubber cover for Concord #10 Steam Hose. This improved cover adds so much to steam hose life, nobody with an eye to operating expenses can afford to overlook it. Yet it costs no more than ordinary hose!

Here's what makes Concord #10 a good choice for hard jobs:

1. It has the same dependably strong heat- and oil-resistant tube that won fame for extra service in BWH Bull Dog Steam Hose.

2. It is fortified with braids of high-tensile steel wire which are heat and pressure resistant. Gives strength with extreme flexibility.

3. Asbestos braid assures perfect cover adhesion, includes new type static-conducting wire.

4. NEW cover is unharmed over longer periods by oil, grease and sunlight—resists abrasion and highest steam temperatures.

When you need EXTRA safe hose that prevents "burst" explosions, withstands working pressure to 200 lbs. and gives you more for your money, investigate Concord #10 with new abuse-resistant cover!

HAVE YOU A JOB WHERE STAMINA COUNTS?

Bring us your toughest problems... we're specialists in solving them. Consult your nearby BWH distributor or write us.

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all Principal Cities

PLANT: CAMBRIDGE, MASS., U.S.A. • P.O. BOX 1071, BOSTON 3, MASS.

Current Comment . . .

The opinions expressed here are from a commentator close to the industry, who, in the past, has interpreted briefly the trends of the paper industry. His comments, which hereafter will appear at greater length than before, and in broader scope, are based entirely on economic and financial facts that emanate regularly from sources that speak with authority.

Production . . . Currency Depreciation Lower Duties . . . New ECA Program

▸▸▸ Despite the manner in which the Washington administration is expanding its efforts to encourage foreign imports into the United States, and unfavorable industrial developments, the paper industry has forged ahead in the last weeks to such an extent that production for the year probably will not be more than 10 per cent under the record figures of the previous two years. This resurgence of production seems likely to more than average out the heavy curtailment in July through mass vacations in the mills, and the lower output earlier when demand had fallen off. As conditions now exist, it appears that present production is about equaling actual consumption, with merchants and consumers inventories built up to normal levels.

Paper Production for 1949 Will Drop About 10%

In the future picture, however, much will depend on the results of foreign depreciation and the extent to which the Administration presses its efforts to foster import trade as a means for attaining recovery in foreign nations.

Impact Felt From Foreign Currency Depreciation

The effects of the depreciation of foreign currencies are beginning to be felt in offerings of foreign papers at lower prices. These offerings indicate that past estimates that foreign mills will not pass on the entire amount of the currency depreciation to American customers are being verified. Offerings so far reported indicate that foreign mills are cutting prices about 15 per cent, or half of the amount of the depreciation. The balance of the dollars secured by sales to this market is being held as additional profits to foreign producers, and as a hedge against future inflation.

The depreciation situation is affecting Canada in various ways, and will probably have an eventual impact on the American market. The Canadian Government has turned thumbs down on all proposals to reduce prices of papers and boards sold in the United States, insisting that the 10 per cent additional return in Canadian dollars be held as a reserve or as increased profits by Canadian producers. Canada is today more closely allied to the United States as a dollar country, than to the sterling areas, and its export opportunities will be impaired, exactly as American exports will be curtailed, due to inability of foreign buyers to pay the higher prices which result in the terms of sterling. Bowater, head of the great Newfoundland mills, has outlined the future by an estimate that Canada will lose sterling markets for about 400,000 tons a year, and must find other markets, presumably by stepping up the quality of its output. This can only mean increased sales of printing papers—in which Canada is such a strong factor—in the United States, either in groundwood grades or even in the higher priced field. Some of this up-grading will take time due to the necessity for mill changes, but a material increase in production of the lower grade papers is possible without radical equipment improvements.

All present indications are that the devaluation of foreign currency will have no immediate, or radical, effect on prices. Swedish interests insist that they had already discounted devaluation in pricing pulps for export.

New Duties Set—but not Lowest Under Law

Under the Annecy agreements, which will probably become effective January 1 next, rates of duty on wrapping papers and paperboards were sharply reduced, though not in all cases to the lowest figure authorized by law. The kraft wrapping paper duty was cut to the maximum, 10 per cent, but sulphite wrapping was subjected only to a reduction of the duty from 25 to a new 20 per cent rate. The rate on paperboards was cut from 10 per cent to 7½ per cent, and this through a violation of administrative pledges, often repeated, to reduce duty rates only in behalf of countries which were the principal suppliers. The reduction was granted Finland, with shipments of $400,000 per year, but is equally applicable to Canada which is shipping paperboard into this market at the rate of upward of 30,000 tons per year, valued at approximately $5,000,000. The reduction was ostensibly given Finland to facilitate its exports of pie plate and similar boards, even though Finland, already supplied such board at a volume equivalent to 30 per cent of American production.

Recommendations Passed to ECA by Administration

The future program of the Administration is outlined in a formal series of recommendations to the European Co-operation Administration, in part as follows:

1. A new round of reciprocal trade agreement negotiations to be started early in 1950. This may be accompanied by new legislation to widen the scope of the trade agreement law to allow 50 per cent reductions on the rates in effect Jan. 1, 1950. Present reductions were limited to 50 per cent of the rates in effect in 1945, many of which have already been cut to the limit allowed by law.

2. Modification of the Tariff Act by legislative processes to modify present provisions for computing duty on the basis of foreign values. The proposal would be to compute duties on the export value, regardless of home market prices. As explained by one commentator, this would be equivalent to formally legalizing dumping of foreign goods.

3. Repeal of the present "Buy American" law, under which Government agencies are required, except in special cases, to purchase needed goods from American manufacturers. Such repeal would allow the Government printing office to buy foreign paper for the printing of Government documents.

4. To guarantee American investments abroad in foreign plants, which might employ foreign labor to provide the American market with merchandise formerly made at home.

To what extent Congress will approve these sweeping proposals remains to be seen when specific legislation reaches Congress early in 1950.

A storm of criticism has arisen from a publication by the Department of Commerce of an official release which hints that the Canadian and American paper industries have been overbuilt. The release stated that "clear indications at this time are that United States

and Canadian pulp producers may have overestimated the productive capacity which could be built without running into ultimate oversupply. Present indications are that estimates may have been made without sufficient consideration of whether increased world population would have the money with which to buy more pulp and paper . . ." It is possible that an official protest may be made to the Department of Commerce against issuance of a survey which is believed by the industry to be so far from the truth. It is pointed out that 1949 production of paper, even with the recognized curtailment of demand in general buying, has been forced up to within 10 per cent of maximum mill capacity by consumer demand in this country.

▼

FINANCIAL

▶▶▶ PRICES OF securities reached the highest level of the year during the latter part of October, and paper mill issues shared in the advance. The strong demand for both preferred and speculative stocks indicates a move toward hedging on the part of investors against inflation, despite the depressing factors such as the steel and coal strikes and threats of increased income taxes next year.

Container Corporation of America—Net income for nine months ended September 30 was $5,969,732 as against $7,577,721 a year ago.

Hinde & Dauch Paper Company—Net income for nine months ended September 30 was $1,842,816 as compared with $3,194,743 in 1948.

Robert Gair Company—Net income for nine months ended September 30 was $2,477,669 as compared with $3,732,969 a year ago.

Masonite Corporation—Net earnings for the fiscal year ended August 31 were $2,688,886 as compared with $7,027,335 for the preceding fiscal year.

Minnesota and Ontario Paper Company—Net income for nine months ended September 30 was $2,449,366 as compared with $4,742,685 for the same period in 1948.

St. Regis Paper Company—Net earnings for nine months ended September 30 were $8,284,394 as compared with $12,048,192 for the same period a year ago.

Soundview Pulp Company—Net income for nine months ended September 30 was $3,919,851 as compared with $4,367,149 in 1948.

Sutherland Paper Company—Net income for nine months ended September 30 was $1,293,335 as compared with $1,602,290 for the same period a year ago.

Union Bag & Paper Corporation—Net income for nine months ended September 30 was $4,934,789 as against $10,546,336 a year ago.

United Wallpaper, Inc.—Net loss for nine months ended September 30 was $242,993 as compared with a loss of $45,490 in the same period in 1948.

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New York Stock Exchange—Stocks

	Closing Prices October 25	September 25
A.P.W. Products	*2⅝-3	*2⅝-3
Celotex	17¼	17
Same Preferred	17½	16⅝
Certain-teed Products	14¼	13¼
Champion P & F Co.	26⅝	24⅝
Same Preferred	*97¼-99	97
Chesapeake Corp.	*22-22⅝	20½
Container Corp.	39½	36
Same Preferred	98⅝	101
Continental Diamond	8⅝	7½
Crown Zellerbach	28¼	27⅝
Same Preferred	102	100⅝
Same $4 Preferred	98	96¼
Dixie Vortex	*33-33⅝	31
Same "A"	50	50
Eastern Corp.	10⅞	8⅝
Robert Gair	6⅞	7
Same Preferred	*17-17½	17
Gaylord Container	19⅛	19⅝
International Paper	63⅞	58¼
Same Preferred	101	101½
Kimberly-Clark	24⅝	22⅝
Same Preferred	*101-106	99½
McAndrews & Forbes	37	35½
Marathon	24½	22
Masonite	53⅝	48½
Mead Corp.	13⅞	12⅝
Same Preferred	*92½-97¾	89½
Same 2nd Preferred	33½-34½	30½
National Container	7¾	7
Paraffine Cos	*18⅛-18¾	19½
Same Preferred	*102½-103½	——
Rayonier, Inc.	*24-24¼	25
Same Preferred	*30-30⅞	31¼
Scott Paper	63½	60½
Same $3.40 Preferred	97⅝	94⅝
Same $4 Preferred	*106-107½	106½
St. Regis	7⅝	7¼
Same Preferred	81½	81½
Sutherland Paper	35	35
Union Bag & Paper	27	24⅝
United Board & Carton	8⅜	6⅛
United Wall Paper	3½	3⅛
Same Preferred	*25¼-27	25
U.S. Gypsum	100¼	98¼
Same Preferred	*185¼-187	185
West Va. P & P Co.	*45½-46	41⅛
Same Preferred	*108-109	107

New York Stock Exchange—Bonds

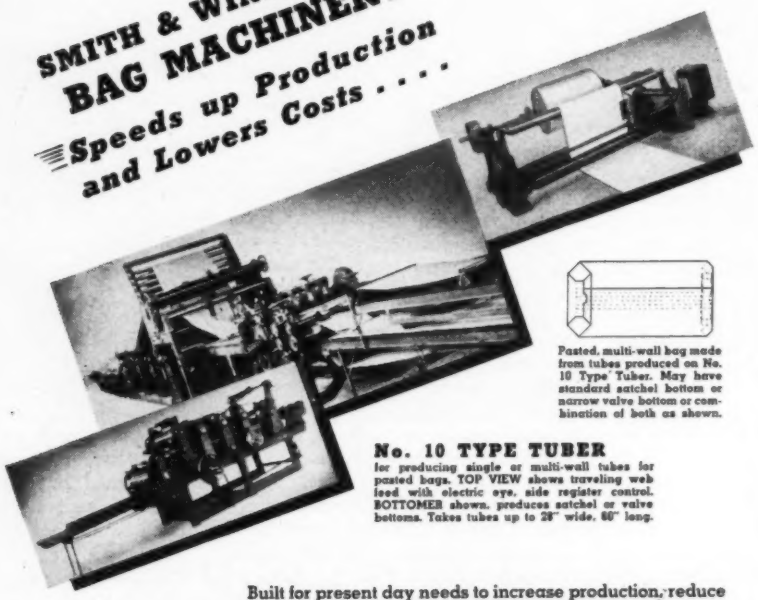
A.P.W. Products 3%	——	——
Celotex 3¾%	——	101
Champion P & F 3%	——	——
Mead Corp 3%	——	102

New York Curb Exchange—Stocks

Am Writing	*6-6¼	——
Great Northern	*39-39½	40

*Closing Bid and Asked Prices

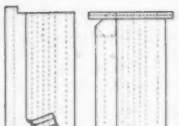
SMITH & WINCHESTER
BAG MACHINERY
Speeds up Production
and Lowers Costs . . . .



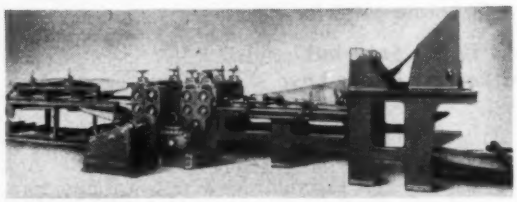
Pasted, multi-wall bag made from tubes produced on No. 10 Type Tuber. May have standard satchel bottom or narrow valve bottom or combination of both as shown.

No. 10 TYPE TUBER
for producing single or multi-wall tubes for pasted bags. TOP VIEW shows traveling web feed with electric eye, side register control. BOTTOMER shown, produces satchel or valve bottoms. Takes tubes up to 28" wide, 60" long.

Built for present day needs to increase production, reduce spoilage and lower unit costs. These machines are custom-made to your requirements and will give continuous, trouble-free service. Increase your profits by speeding up production with Smith & Winchester equipment.



Multi-wall, sewed valve type, gussetted tube made on Smith & Winchester Multi-wall Tuber.

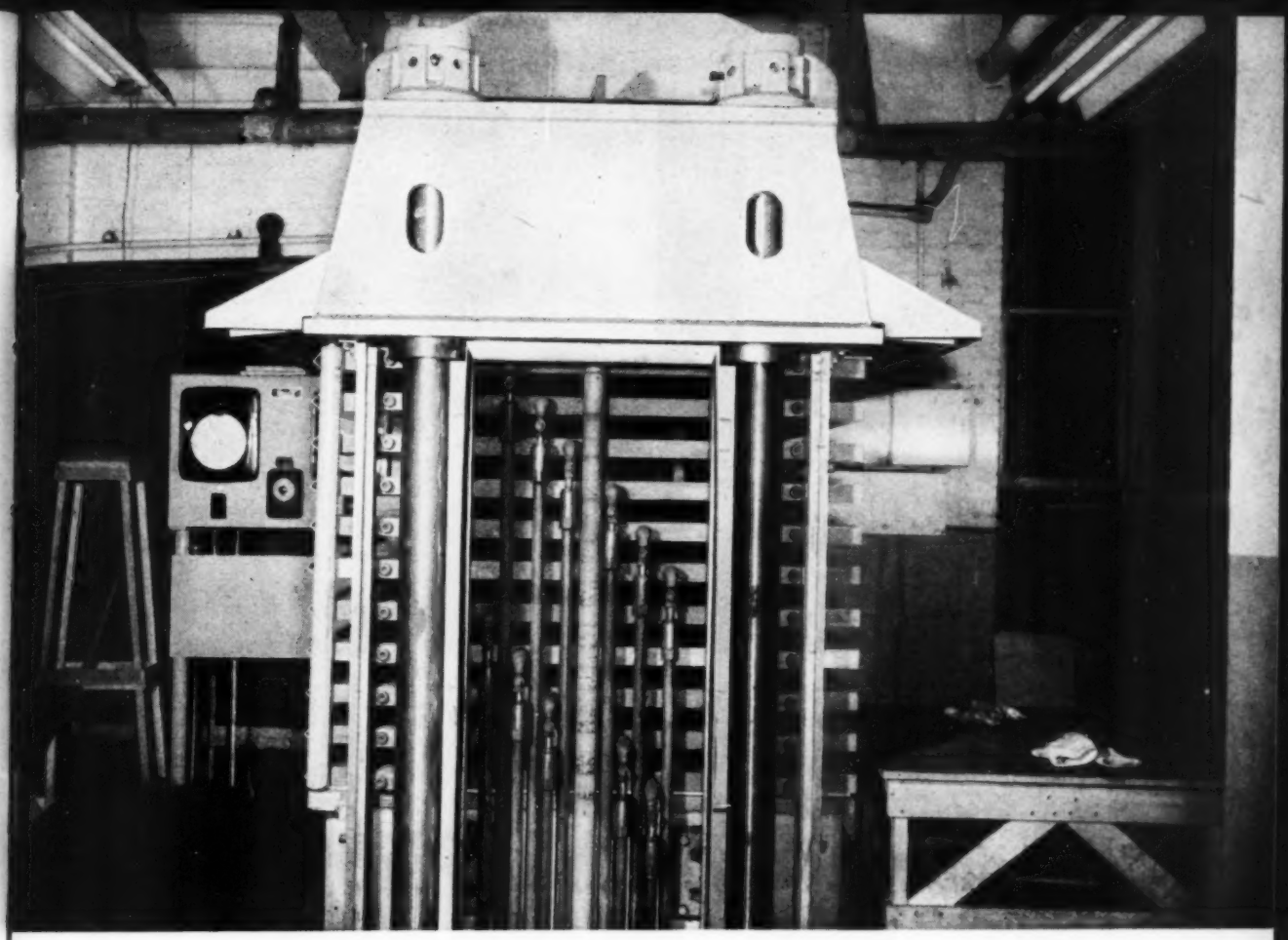


S & W MULTI-WALL TUBER

Up to 100,000 valve notch tubes each 8-hour day may be produced on this Multi-wall Tuber for sewed valve bags. One to 6 walls. Machine built in 2 sizes, 20" and 26" face. Up to 6" gussets. Tubes 26" to 50" long. Improved cross pasting units, photo-electric compensating drives and flying splice paper roll stands can be furnished.
If you have a bag problem write us.

THE SMITH & WINCHESTER
Manufacturing Company
South Windham, Conn.

SERVING THE PAPER INDUSTRY SINCE 1828



Solves heat-and-water problem...

Lubrication of the telescopic steam joints on a hot-plate veneer press was a continual problem for a midwest furniture manufacturer. The job required a grease that would withstand temperatures of 240° to 260°F. and the severe washing action of steam and water.

Conventional greases failed to meet these requirements. Joints had to be lubricated frequently. This interfered with production and resulted in excessive consumption of the lubricant.

A Standard Oil Lubrication Engineer suggested that Stanolith Grease No. 57 be used. This is a lithium soap product capable of standing up under high temperatures and of resisting the washing action of water. Since the switch to "Stanolith," the joints have been lubricated between shifts with no interruption of production. Lubricant consumption has been reduced 40%.

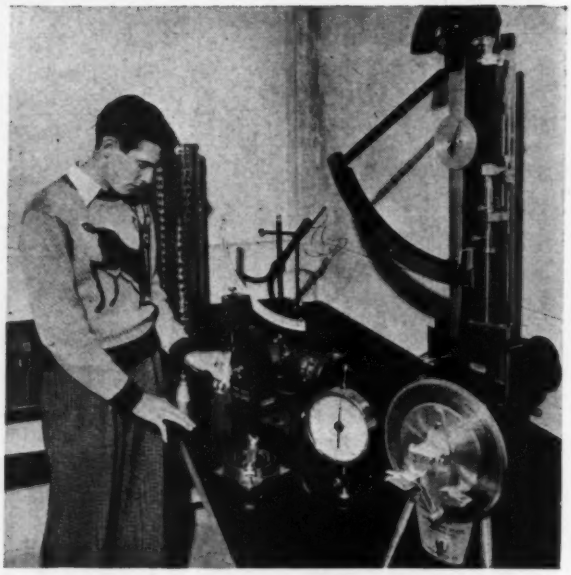
Stanolith Grease No. 57

Where the combination of heat and water causes lubrication difficulties, try Stanolith Grease. A Standard Oil Lubrication Engineer will be glad to give you more data on this versatile product. If your plant is located in the Midwest, write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois, to secure the services of the engineer nearest you.

STANDARD OIL COMPANY (INDIANA)

STANDARD

One wing of William McCracken Hall, at WMC, as seen from the entrance. This new science building houses the pulp and paper technology department



Paper testing machines in the constant and humidity laboratory, a feature of WMC's new miniature paper mill

Model Paper Mill Part of WMC's

▶▶▶ McCRACKEN HALL, science building, just completed on the campus of Western Michigan College, Kalamazoo (Mich.), was formally opened October 28. Perhaps the best description of the basement of this new building is *a paper mill in miniature.*

The basement is given over to the college's department of pulp and paper technology, now beginning its second school year under direction of its founder, Dr. Alfred H. Nadelman. This year Dr. Nadelman has 16 freshmen, 16 sophomores and nine seniors enrolled in his courses.

This specialized curriculum was inaugurated at WMC at the request of the industry in this area. Since that was the case, industry has taken much more than an academic interest in the project. According to Dr. Nadelman's inventory, thousands of dollars worth of equipment has been given the school for use in its paper technology courses by the paper industry and allied concerns.

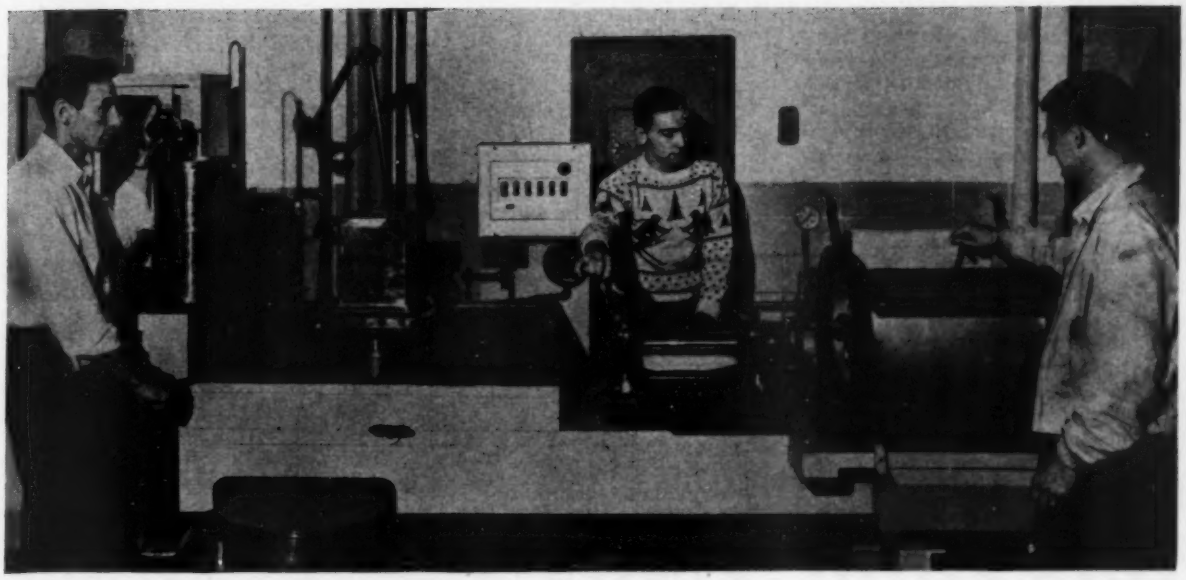
The department allotted to Dr. Nadelman's students is as completely adapted to his work as it was possible to fit it. Ovens, balances, standard chemical equipment, and laboratory furniture were all supplied by the State, following Dr. Nadelman's designs. Then the paper industry and its allied fields responded to appeals for equipment.

Following is the list of equipment already received and installed at the end of October. Dr. Nadelman said he had received a large number of inquiries as to his equipment. He expressed himself as happy to make his inventory public "since there is a great need for more such departments in schools all over the country."

2—Niagara Beaters, 1½ lb. with clamps
1—Laboratory Sheet Mold, 7¾" diam., with accessories
1—Laboratory Sheet Mold Standard TAPPI, with accessories
1—Noble and Wood Sheet Machine, complete with white water return
1—Pump and Press
1—TAPPI Disintegrator
1 (set)—Consisting of 25 drying rings and 24 disks
1—Fiber Classification Grid Plate
1—Bauer McNett Classifier with seven screens
1—Schopper-Riegler Freeness Tester with accessories
1—Canadian Freeness Tester with accessories
1—Schopper Type Tensile Tester
1—T.M.I. Strip Cutter
1—T.M.I. Desk Micrometer
1—T.M.I. Pull Sheet Paper and board scale
3—Dennison Paper Testing Wax Sets
1—Cobb Sizing Tester
1—Gurley-Hill S-P-S Tester
1—Gurley Stiffness Tester (motor-driven)
1—Gurley Densometer
1—Photoelectric Reflection Meter, Votovolt, complete
1—M.I.T. Folding Endurance Tester
1—Elmendorf Tearing Tester
6—Vapometer Cups
1—Valley Weighing Oven with balance
1—Taber Stiffness Gauge
1—Specimen Cutter for above
1—Taber Abrasion Tester
1—Williams Oil Penetration Tester
1—Bekk Smoothness Tester
1—Hunter Reflectometer
2—Crossley Pulp Samplers
1—Atlas Fade-Ometer with Transformer
1—Hart Moisture Meter, line operated
1—Bausch and Lomb Opacimeter
1—G-E Puncture Tester
1—Mullen tester for board (motor-driven)
1—Mullen tester for paper (motor-driven)
1—Perkins pressure bulker
1—Finch wet strength testing attachment

"Constant technological progress," Dr. Nadelman pointed out, "is rapidly changing the art of papermaking into a science. Industry has a strong demand for college trained men who, due to their scientific and technical background are prepared to occupy positions in the technical, manufacturing, sales and executive areas of the paper industry.

"Western Michigan College is one of a limited number of colleges to offer instruction in pulp and paper



In the pulp and paper technology department at Western Michigan College, three students are shown operating the Noble and Wood sheet machine recently installed. The machine produces 8 x 8-inch sheets of paper

Newly-Dedicated Science Building

technology," he continued. "The four-year course leads to the degree of bachelor of science. The curriculum is foundational in nature and provides for actual work experience in paper mills during the summers. It is expected that the student will work at least two of the three summers spent in this course."

Alfred H. Nadelman

Following is an outline of the curriculum: *First year,* orientation to paper technology, rhetoric, algebra and analytic geometry, general chemistry, mechanical drawing, library methods and physical education; *second year,* pulp and paper manufacture, language and literature, physics, qualitative and quantitative analysis, physical education and electives.

Third year, evaluation of pulp and paper, elements of industrial chemistry, fiber microscopy, coloring and filing of paper, organic chemistry, wood chemistry, sociology, language and literature and electives; *fourth year,* chemistry and technology of plastics; bleaching, pulp purification and deinking; auxiliary equipment for pulp and paper mills, converting of paper, physical chemistry, economics and electives.

The following electives are offered: Engineering materials, engineering processing, electronics, electrical measurements, accounting, salesmanship, business correspondence and report writing, cost accounting, business law, business administration.

Approximately 2,500 sq ft of floor space is given over to this department. One of the outstanding features of the department is a large laboratory, with an atmospheric lock entrance, where a constant temperature and controlled humidity by air conditioning will be maintained. This will permit accurate evaluation of pulp and paper.

Active support for the paper technology department is given by practically all paper mills in the Kalamazoo valley. In addition, the Kalamazoo valley section of the Technical Association of the Pulp and Paper Industry and the Michigan division, American Pulp and Paper Mill Superintendents Association staff six committees directly interested in conduct of the curriculum, under the general head of the advisory committee.

The special committees are concerned with scholarship, library, laboratory equipment, summer employment, plant visitation, and publicity.

Weyerhaeuser's Affiliate—Potlatch Forests—To Build Mill in Idaho

▶▶▶ A NEW PROJECT announced recently by Potlatch Forests, Inc., will give Weyerhaeuser Timber Company its newest pulp and paper mill. The new mill will be located at Lewiston, Idaho. William P. Davis, for many years an executive of the International Paper Company, has been elected president and general manager of Potlatch Forests, Inc. Weyerhaeuser affiliate, which will carry out the company's extensive plans for a more complete utilization of the "mixed woods" which grow abundantly in northern Idaho.

Potlatch Forests, Inc. is one of Weyerhaeuser's largest lumber producing

units. It operates sawmills at Lewiston, Coeur d'Alene and Potlatch, Idaho. In the past, its production has run largely to white pine, except during the war when the excessive demand for lumber made it possible to include such species as white fir, red fir, larch and cedar which constitute approximately one-half of the forest cover in the Inland Empire. Since it usually is not possible to maintain lumber production on a fifty-fifty basis as between white pine and the so-called mixed species, Weyerhaeuser has completed its plans for the integration of its new pulp and paper plants with its lumber production facilities at Lewiston. All three of its sawmills in the Inland Empire will continue to produce white pine lumber and as much of the remaining species as the trade will consume. Balance of the mixed species will be used by the pulp and paper plants.

William P. Davis

The decision to make paper and pulp from the mixed woods (other than white pine) of the region follows an extensive survey of raw materials and their suitability for the purpose. What to do with these fast growing trees has long constituted a major problem. Efficient logging practices called for their utilization when the mature white pine trees were harvested, as Potlatch Forests, Inc. has been operating on a sustained yield basis for several years. Since they were not suitable for all types of lumber they had to be left in the forests. Consequently, Weyerhaeuser's research men have been diligently seeking an answer to the problem for some time. Having ascertained to their satisfaction that pulp and paper can be produced economically from the Inland Empire's vast yield of mixed woods, Weyerhaeuser is now proceeding with its extensive production plans.

William P. Davis, who was selected to head up the expanded activities, is well known throughout the pulp and paper industry. He grew up with International Paper Company and has played a major role in designing, engineering and construction of its several plants in the South. He began his career in 1919 as an electrician for Southern Paper Company at Moss Point, Mississippi. By 1922 he had become chief engineer of the plant.

When International Paper Company purchased the Moss Point mill in 1929, Mr. Davis was transferred to Panama City, Florida, to help complete construction of and to assist in starting International's new mill at that point. From then on he was busy designing and building additional plants and machines to carry out International's rapidly expanding program in the South. His activities took him to Mobile, Alabama; Georgetown, South Carolina; Springhill, Louisiana; Camden, Arkansas and Bastrop, Louisiana.

In 1941, Mr. Davis was transferred to Mobile, Alabama, where he not only continued his work as chief engineer, but was made assistant to the production manager of all Southern Kraft Division operations. In 1943, he went to International's New York office as co-ordinator of production and sales. Shortly afterward he was made manager of the Container Division and of the Single Service Division.

Weyerhaeuser's interests in pulp and paper production are extensive. It operates The Northwest Paper Company in northern Minnesota with plants at Cloquet and Brainerd. It pioneered in the development of sulphite hemlock pulp in the Pacific Northwest with plants integrated with sawmills at Everett and Longview, Washington. Recently it built a sulphate plant at Longview and a kraft container board plant at Springfield, Oregon, where its newest sawmill is now beginning to operate.

While the problems involved in pulp and paper production in the Inland Empire are said to be numerous and challenging, the Weyerhaeuser company is proceeding with its plans fully confident that the forest area tributary to the Clearwater River can be made a permanent source of raw material for its new operations.

Mr. Davis will maintain headquarters at Lewiston, Idaho, and will make his home in that city.

▼

▶▶▶ A 3-YEAR PROGRAM for placing veterans of World War II on jobs, won for the Crown-Willamette Paper Company, Camas, Washington, the National Legion Employer Citation. The award has been announced by the Washington Department, American Legion.

NATIONAL CONTAINER ADDS NEW EQUIPMENT—RECOVERY UNIT AND PRECIPITATOR

An improvement plan under way at the plant of National Container Corporation, Jacksonville, Florida, will add new equipment to cost about $650,000, according to announcement made October 20 by W. T. Webster, vice president and general manager.

Of this amount, about $100,000 covers the cost of a second precipitator which will remove dust and fumes from waste products. Mr. Webster stated that the mill is at present removing 85 to 90 per cent of dust and odor from its exhaust gases, but when the new precipitator is adjusted to peak efficiency, it will be possible to remove more than 95 per cent.

The remaining amount, $550,000 is being spent for a new recovery unit. Most of the steel work for the recovery unit building already is erected and it is expected the unit will be in operation by April of next year. The new precipitator has been installed and engineers are now making adjustments to the equipment. The old precipitator, in use since 1942, is being installed in a new location and will soon be ready to go into operation again.

▼

MEAD SELLS DILL & COLLINS DIV.—BLDGS. TO BE RAZED

Sale of the Dill & Collins Division of The Mead Corporation of Chillicothe, Ohio, has been sold to Henry Smink, who will hold title for an investing syndicate.

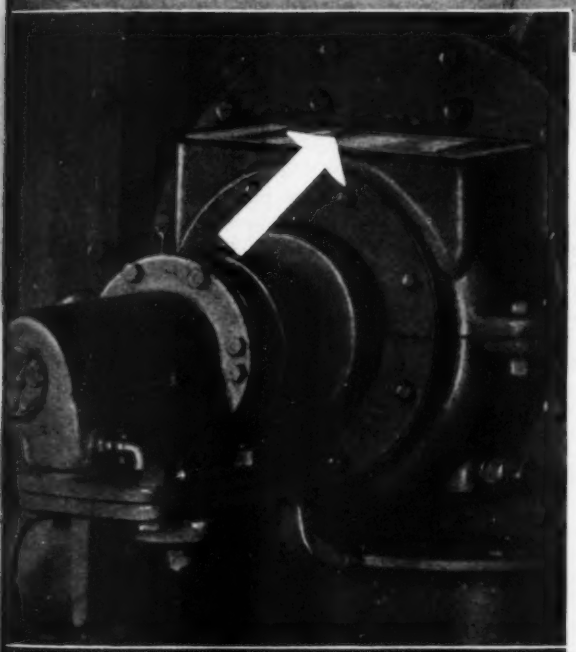
The plant, located in Philadelphia, has been shut down since last April. It is understood that the purchasing syndicate will demolish some of the buildings and erect others to be leased to manufacturers for factory and warehouse space.

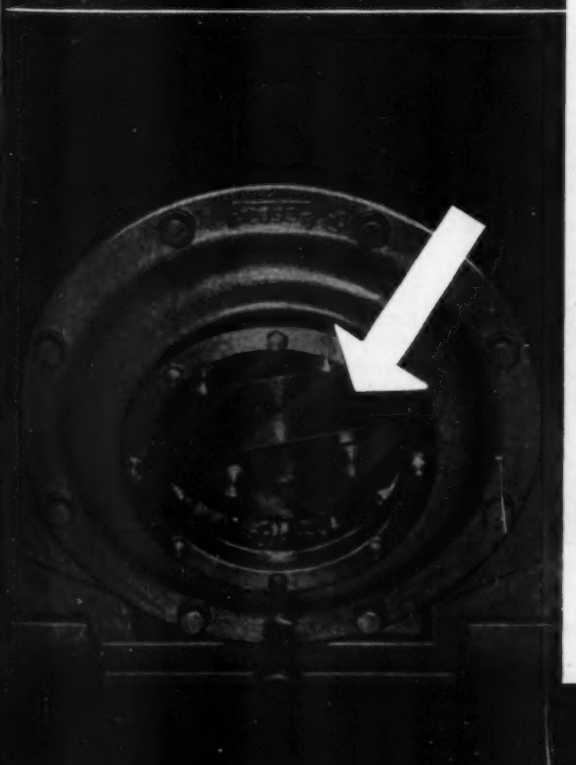
▼

CAMP MFG. CO. PLANS TO INSTALL NEW FOURDRINER

Completion of plans for the installation of a new high speed 226-inch fourdrinier paper machine has been announced by J. L. Camp, Jr., president of Camp Manufacturing Company, Franklin, Virginia. It is scheduled for October, 1950.

This new machine will manufacture lightweight, unbleached kraft papers. It will complement the present 212-inch machine to be run on heavyweight kraft paper and the 80-inch machine to be run on kraft specialties now in operation. Also, it will provide an outlet for surplus pulp producing capacity now available at the Franklin mill.





THESE WINDOWS LET YOU SEE THE BEARINGS WORK

You don't have to "guess" about oil flow or bearing performance in the new Puseyjones Machines.

Here are lucite windows which allow you to observe the flow of oil and the condition of the bearings *without dismantling*. Save time. Help to avoid breakdowns.

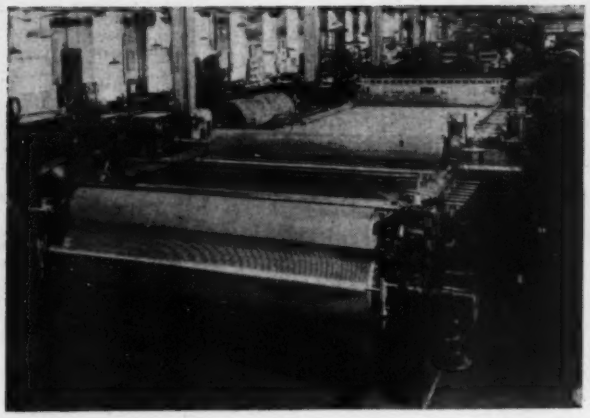
When it becomes necessary to remove the bearings on the dryer journals in the new Puseyjones Machines, you can forget cumbersome screw jack pullers. A high-pressure hand pump builds up the oil pressure under each of the bearings and literally forces it off.

With design improvements and labor-saving devices like those described above, no wonder we are proud of the latest Puseyjones Machines. The Paper Industry has set production records on Puseyjones Machines for three generations. Our engineers will gladly show you why.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery
Wilmington 99, Delaware, U.S.A.

THE SIGN OF TRADE MARK SUPERIOR QUALITY



Fourdrinier from couch

Dryer stack from calenders

New Mill In South America

▶▶▶ A COMPLETE NEW and ultra-modern straw paper mill started up in Montevideo, Uruguay, on September 15, by Fabrica Nacional de Papel, provided more than usual interest for the American paper trade. The design and layout of the complete mill, including the mill foundation, was accomplished by The Sandy Hill Iron and Brass Works of Hudson Falls, N.Y. Starting of operations in this mill establishes it as one of the world's largest producers of fine paper from bleached straw.

Millard F. Hayes, Jr., erection engineer in charge of paper machine erection in South America for The Sandy Hill Iron and Brass Works, was present when the machine was started up; he also assisted Rodolfe Rheinbacher, technical manager of Fabrica Nacional when the first paper was made.

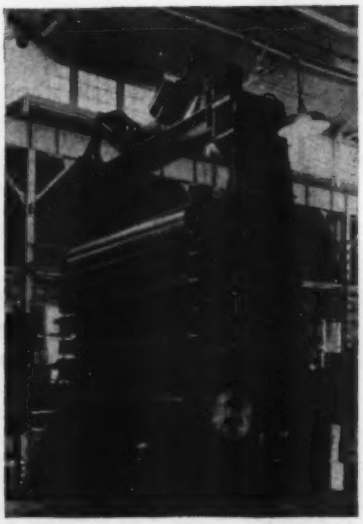
In December, 1946, when the contract for this mill was signed by The Sandy Hill Iron and Brass Works and the Uruguayian concern, ground had not been broken for this modern mill. A site had been selected adjacent to the existing pulp and paper mill of Fabrica Nacional, one of South America's leading producers of paper.

When actual construction operations began, it was found that the basement must be literally hewn from solid rock. The basement of the mill is below the river level and designing plans had to provide that all mill drainage be accumulated in a collecting tank below the basement floor from whence it is pumped to a higher level and thence drained by gravity to the river. In addition to the design and layout of the paper machine, Sandy Hill engineers made complete plans for the mill piping system, including stock lines, white water lines, fresh water lines, compressed air lines and drainage lines. They also designed all basement drainage canals which are covered throughout with Bordens steel gratings.

The entire system is automatically controlled. The stock preparation equipment is on the same floor level with the paper making machinery.

The various kinds of pulp are fed into a 10-ft diameter Dilts Hydrapulper the top of which extends 4 ft above the main floor. The Hydrapulper is driven by a 100-hp motor located on the basement floor.

When the bales have been sufficiently pulped the stock is pumped to one of two holding chests. One chest is for kraft or sulphite stock and the other for broke or other paper stock.



Openside calender with circulating oiling system

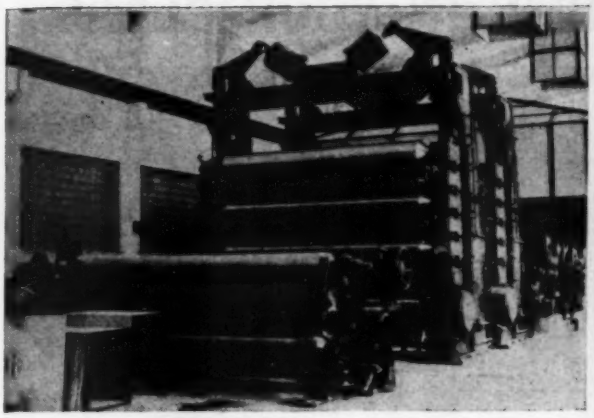
Bleached straw pulp is supplied to the beater units in slush form or wet laps. These chests each have a capacity of 3000 pounds and they are equipped with 48-inch diam. propeller agitators. The slope and contour of the sides and bottom are designed to provide maximum agitation. Each chest is provided with a 12-inch electrically-operated dump valve. From the holding chest the stock is pumped to the circulating chest on either of two Noble and Wood Victory beaters with a capacity of 2000 pounds. Prepared stock is pumped to the machine chests.

All stock piping and fittings are fabricated of stainless steel. Type 316 stainless steel is used in all fabricated pipe over 6-inch diameter. All fresh water and white water lines of 4-inch diameter and under are of copper. In this completely modern mill the finest piping obtainable has been used throughout.

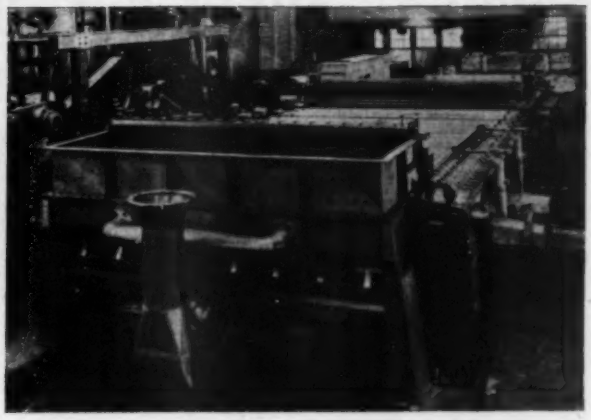
All motors and electrically-operated valves are controlled from a mezzanine floor at the beaters. An operator stationed at this location has direct supervision over the entire stock preparation equipment.

A complete crane system is in operation with all the track ways running the length of the mill. A monorail complete with electrically-operated hoist provides that the paper may be weighed while on the trolley without removal to scales. The weight is recorded in addition to being shown on a dial.

A Bird rotary screening system and Bird Dirtec unit precedes a complete Sandy Hill-Bertrams flow control system in the paper machine room. The Sandy Hill-Bertrams flow control unit



Installation picture of Pope reel and twin calender stacks



Sandy Hill-Bertrams Flow Control unit, showing recirculation

Makes Paper from Bleached Straw

features the advantages of recirculation and the substitution of the multiple manifold approach method for the conventional mass flow system. The Fabrica flow control unit is equipped with a primary Neilson slice and plain secondary slice. The Neilson slice is designed to provide the desired flow with maximum caliper control. The secondary slice provides control for heavy stock.

The entire unit is of fabricated stainless steel construction designed not only for ease of control but for providing a maximum of cleanliness in handling the stock. A dump valve arrangement provides for the emergency dumping of stock and is designed in such a manner that the dumped stock is delivered back into the mill flow system to prevent waste.

A Trimbey consistency regulator provides the most accurate control of consistency of the paper stock and makes the operation 100 per cent automatic. A jordan ahead of the flow control system was furnished by Noble and Wood.

The fourdrinier, a nonremovable shaking type, designed for a maximum paper speed of 500 ft, covers a wide range of papers, including straw. A Sandy Hill-Bertrams shake, complete with drive and motors, is part of the fourdrinier arrangement.

An automatic constant tension wire stretch insures a longer wire life. The wire guide is a standard Gilbert and Nash automatic guide. A special water marking dandy roll and a plain dandy were provided by Spencer. The dandy is driven by a Sandy Hill-Spencer electrical dandy roll drive.

Table roll bearings are of the latest type, being especially designed by Sandy Hill for a shaking type fourdrinier. Antifriction bearings are used on all wire and table rolls, breast roll and couch roll.

The suction box section is made up of six suction boxes of all stainless steel fabricated design with first grade end of grain hard maple covers.

All parts of the fourdrinier in touch with the paper stock are of noncorrosive metals.

A 24-inch diameter suction couch was provided by the Downingtown Manufacturing Company.

The press section consists of three main presses, the first of which is a suction press with a 20-inch diameter suction roll. The presses are of latest design equipped with antifriction bearings, with pneumatic loading and control equipment by Foxboro. It is interesting to note that this equipment provides finger tip control for adjustment of pressures during operation.

The felt guides in the press section are all Gilbert and Nash automatic felt guides, and all guide roll, felt roll and stretch roll bearings are of antifriction design.

In keeping with the modern design of the machine as a whole, the overhead press framing, necessary to give the proper felt runs, is of fabricated steel construction covered with corrosion resistant coating.

The dryer section consists of twenty-three 48-inch diameter paper dryers, two 60-inch and four 48-inch diameter felt dryers. Sandy Hill designed bronze-lined bearings are used on the paper dryers. The felt dryers have antifriction bearings by Torrington. Gilbert and Nash guides are used on all felts.

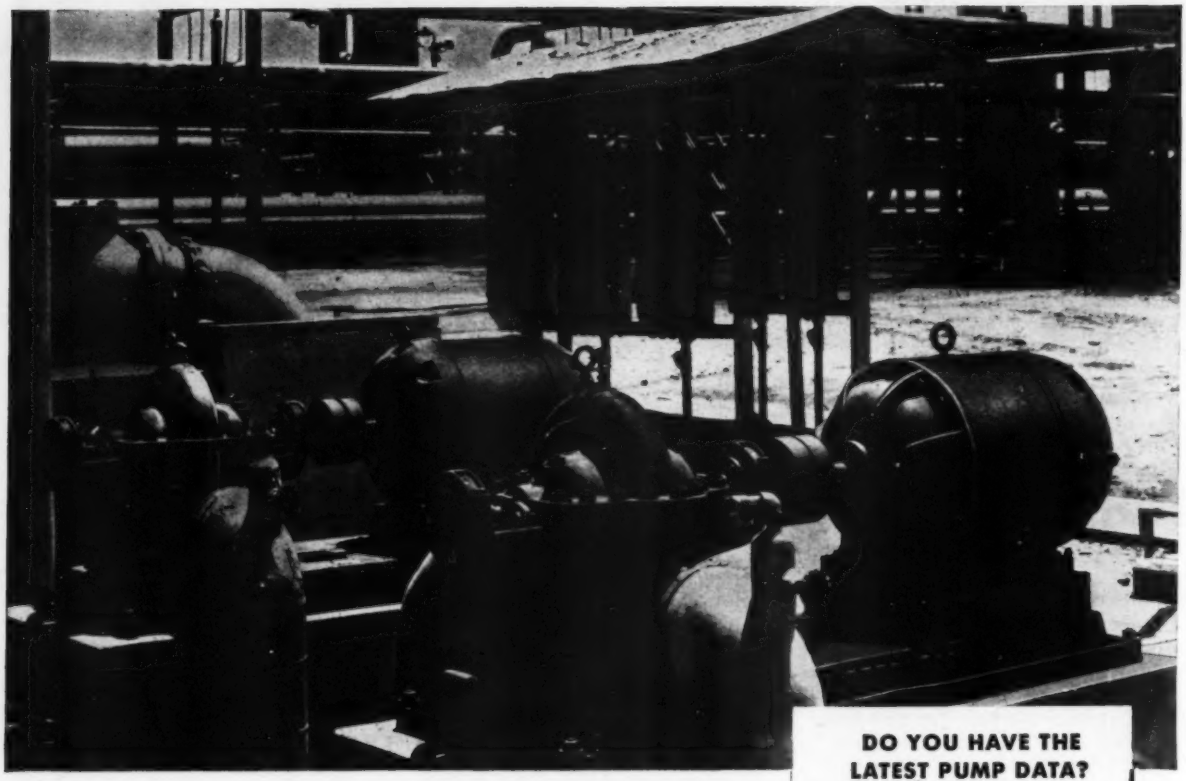
Two 24-inch diameter monel covered cooling cylinders at the end of the dryer stack satisfy special requirements of the customer's papermaking. A Ross evacuation system complete with hood and fans is installed over the entire dryer section. Ross also supplied a bottom felt system which directs blasts of heated air through jets at the bottom dryer felts for more efficient drying.

The entire dryer stack is equipped with a Stickle differential drainage and steam control system to provide the most efficient control known to the trade of steam supply and evacuation of condensate from the dryers.

Probably the most outstanding feature of the dryer stack outside of the efficient drying system is the general arrangement of the dryers and the design of the dryer frames themselves. The section is designed so that the bottom dryers are located on a curbing slightly above the floor level. This lowers the entire stack making all parts of the section more accessible. To further implement the accessibility of all felt rolls and so forth, modern box type cast iron dryer frames were designed. These frames are less massive and have greater strength than the conventional dryer frame in common usage. Their more compact nature allows a great deal more working room in the dryer stack and greatly reduces the possibility of accidents among working personnel.

Immediately following the dryer stack are two seven-roll Sandy Hill open side calender stacks. These stacks have fabricated steel frames. A circulating oiling system lubricates all bearings. Pneumatic loading and lifting is used for raising and lowering the calender rolls.

WHERE THERE'S A PUMP IN YOUR PLANS



Plan with Peerless Centrifugal Pumps

From plan to plant there's a Peerless horizontal centrifugal pump that meets your needs. For the diversified, continuous duty services of private industries and public projects, Peerless Pumps incorporate many proved advantages in design and construction for extended pump life and operative economy.

All along your flow lines, Peerless can provide pumps incorporating the latest principles of hydraulic practice and experience plus the versatility and efficiency you require for *peerless* pumping performance.

For example, the pumps shown above are single stage, double suction, general purpose Type A pumps, a comprehensive line of Peerless pumps offering a capacity range from 50 to 60,000 gpm. There are scores of other Peerless types, hundreds of other Peerless models for thousands of pumping applications. Peerless furnishes horizontals for handling solids in suspension as well as for clear liquids. There are pumps for boosting, circulating, transferring and filtering. They can handle volatile L-P Gases or tricky acid, basic and salt solutions. They can move liquids at high temperatures or they can provide water (or foam) for *Underwriters' approved* fire protection. Duty can be intermittent or continuous; both single and multi-stage units, with the type of drive you desire, are available, meeting widest head and capacity conditions. Pump and driver are engineered as a unit, tested in a modern hydraulic laboratory that duplicates actual field conditions, to match or exceed purchasers' expectations.

Plan with Peerless for all your needs for pumps. Peerless field and sales engineers are located in all principal cities to help you whenever and wherever there's a pump in your plans. For pump engineering information or service, call on them, or if you prefer, write for the latest pump engineering data. The chart at the right lists a number of the types of Peerless horizontal pump bulletins in which you will be interested.

DO YOU HAVE THE LATEST PUMP DATA?

Informative Engineering Bulletins Available From Peerless Pumps

Here are a few of the services Peerless Pumps perform. Request data by Bulletin number.

Pump Service	Bulletin No.
Water Supply	B-1300
Fire Protection	B-1500
Chemicals and Oils	B-810
Vaporous Liquids	B-2201
Butane-Propane	B-2200
Boiler Feed	B-806
Sewage and Solids	B-154
Hi-Pressure	B-310
Acids and Caustics	D-2400
Process Services	B-803
All-purpose Pumps	B-2301

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In order to condition the sheet prior to reeling on the Sandy Hill Pope type reel a battery of water jets is installed. These jets deliver a fine mist or vapor to the underside of the sheet before reeling.

The Sandy Hill-Pope type constant speed reel was chosen for its efficient operation and in keeping with the modern designing of the machine throughout.

The driving power for the machine is provided by a Sandy Hill selective drive consisting of eleven right angle reduction units. Embodying the most modern ideas in power transmission, Sandy Hill designed drives assure an unvarying draw between sections, provide a fineness of draw regulation and exact draw maintenance. The motive power is supplied by a 350-hp motor generator set provided by Reliance Electric & Engineering Company. The d-c motor used as a prime mover is also by Reliance.

The sole plates for the entire machine are of cast iron and completely machined in accordance with the best standard practice.

The vacuum pumps throughout, i.e., fourdrinier wire, suction boxes, suction couch, suction 1st press and the Scofield Venturi Throats, were all supplied by the Nash Engineering Company, through their representatives, Clark and Vicario.

Felt conditioning equipment in the form of felt conditioners, venturi throat suctions and showers are all Scofield equipment built exclusively by Sandy Hill.

Doctors for the press rolls and calender rolls are furnished by Lodding.

All liquids throughout the mill are handled by Gould centrifugal pumps with electric drives.

The starting of this completely new and modern mill for manufacturing straw into fine paper makes a significant milestone in the further rapid development of the paper industry in South America.

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MORRIS PAPER MILLS BUYS NEW PLANT—WILL MOVE BOX DIVISION TO MELROSE PARK

The purchase of a modern plant at 1740 North 25th Avenue, Melrose Park, Illinois, has been announced by the Morris Paper Mills, Chicago.

It is stated that the new plant will house the Imperial Box Division of Morris Paper Mills which will be moved from Chicago to the new building as soon as possible.

The building is a new one-story brick and steel, 264 ft by 320 ft, plus a two-story contiguous office building. It is located on a site of approximately eight acres.

New Victory Beater recently put into operation at plant of Hawthorne Paper Co., Kalamazoo, Mich.

"Victory" Beater Installed at Hawthorne—Another One Planned

▶▶▶ A NEW BEATER installation has just been put into operation at the plant of Hawthorne Paper Company, Kalamazoo, Michigan.

Built by the Noble and Wood Machine Company, this "Victory" Beater —as it is known—is the first of two such units scheduled for the Hawthorne plant. The second will be installed in the near future.

The new pulp preparation equipment is a 2,600 pound batch run apparatus embodying a new application of the principle used in the Holland beaters it is designed to replace. As explained by George H. Gerpheide, president of Hawthorne, this refinement permits control of the operation to such an extent that it is far more "reproducible" in the uniformity of successful batches, thus improving quality of the finished product.

Both rags and wood pulp are used by the Hawthorne mill. In practice, the wood pulp is run through a breaker tank while the rag stock is getting its initial breaking and hydration in the big stock tank of the Victory beater. Then the two are combined in the 2,600-pound tank and the process continued.

In the Victory beater, the bedplate is the variable factor, raised or lowered by hydraulic pressure against the bottom of the roll, set above the tank. A total pressure of around 30,000 pounds can be exerted against the roll as the stock is pumped between the roll and the bedplate.

The method is completely controlled automatically by Taylor Instrument Companies system. The 66-inch long roll of the Victory beater, 54 inches in diameter, with its 162 bars, revolves at 140 rpm in contact only with the stock pumped to it that is actually being processed. This new method effects a substantial saving in power.

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▶▶▶ THE STORY of the company's 50th anniversary was presented by President C. W. Smith at the annual meeting of stockholders of Central Paper Company, Muskegon, Michigan. At the Board meeting, held subsequently, all officers of the company were re-elected. E. C. Farmer is vice president and general counsel; R. D. Terrien, secretary-treasurer.

▼

K-C HONORS MEMBERS OF NIAGARA FALLS 25-YR CLUB

An honorary dinner was given by Kimberly-Clark Corporation, Niagara Falls, New York, on October 14, in special recognition of the 90 members of the Niagara Falls chapter of the company's Quarter Century Club, and their wives.

Nine new members, each with 25 years of company service, were inducted by Fred Van Liew, manager of the firm's local plant. The new members were awarded personal certificates of membership and $100 savings bonds by Cola Parker, Kimberly-Clark president and speaker of the evening. In his remarks, the speaker stated that "the mill was first built less than 30 years ago . . . there already are 90 members in the 25-year club . . . the average service period is 28 years."

SEEN AT THE BANQUET speakers table when Nekoosa-Edwards Paper Co. celebrated its 25 years of industrial forestry were: (L to R) E. L. Demmon, director of Lake States Exp. Station, US Forest Service; F. J. Kilp, Nepco's mgr. of Woodlands Operations; James Corcoran, past chairman of Wisconsin Conservation Commission; Chas. F. Smith, chairman of that Commission; Oscar A. Rennebohm, Wisconsin's Governor; John E. Alexander, president and general manager of Nekoosa-Edwards company; D. C. Everest, president Marathon Corp.; E. W. Tinker, exec. secretary, American Paper and Pulp Association

Nepco Forestry Program's 25th Anniversary

▶▶▶ A BANQUET given October 4 by Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin, commemorated the twenty-fifth anniversary of the establishment of the company's forest management program.

Government officials, paper industry executives, public and private foresters, and conservation officials joined in tribute to the achievements of the company. More than 300 persons gathered for the banquet at John Edwards High School auditorium in Port Edwards and heard addresses by a dozen notable speakers. This was the climax of a day-long field program in which conducted tours were made to the Nepco forest nursery and to one of its many plantations for actual demonstrations of seeding, planting, fire-lane construction, and fire fighting.

Highlights of addresses given by distinguished guests present, characterized this anniversary as a memorable milestone in forestry history, not only in Wisconsin, but in the nation:

Governor Oscar Rennebohm

An interested spectator during the afternoon field trip, Wisconsin's Governor Rennebohm headlined the list of speakers on the evening program. He said, "this is a real treat for me . . . my congratulations to Nepco on being a real producer." Pointing to the Nekoosa-Edwards forestry activities as a practical example of what private industry and private citizens can do in advancing the general public welfare, the governor called upon the people of the state "to expand your interest beyond your own jobs and your own businesses and take more seriously your responsibility of citizenship in order that we may together build a better Wisconsin."

Charles F. Smith

Mr. Smith, chairman of the State Conservation Commission, characterized the anniversary observance as "one of the main landmarks in Wisconsin conservation history." He said the establishment of the Nepco industrial forestry program "marked the beginning of a real form of conservation in this state."

D. C. Everest

The president of the Marathon Corporation (Rothschild) is himself a pioneer advocate of industrial forestry. Mr. Everest declared that "Nepco has kept its eye on the ball, reversing the field of what some of us may have regarded at times as a losing battle." Recalling how Nekoosa-Edwards became the first paper company in Wisconsin to set up a forestry project, Mr. Everest pointed out that four other companies "have followed its lead and are now doing very effective work along this line."

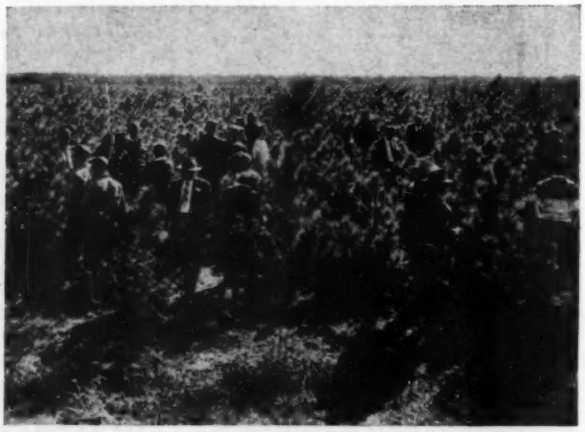
E. W. Tinker

Reference was made by Mr. Tinker, who is now executive secretary of the American Paper and Pulp Association, to an incident in 1932 when he was Lake States regional forester. He met with Wisconsin pulp and paper executives to discuss the state's forestry problem. "In those depression years," he said, "the idea was that here was a problem to be dealt with principally through government sources. What we say today, however, demonstrates that industry, and particularly the pulp and paper industry, is carrying its full share of responsibility for perpetuating the timber resources." He credited Wisconsin as being well in the lead in "this economic business of growing wood."

Dr. Raphael Zon

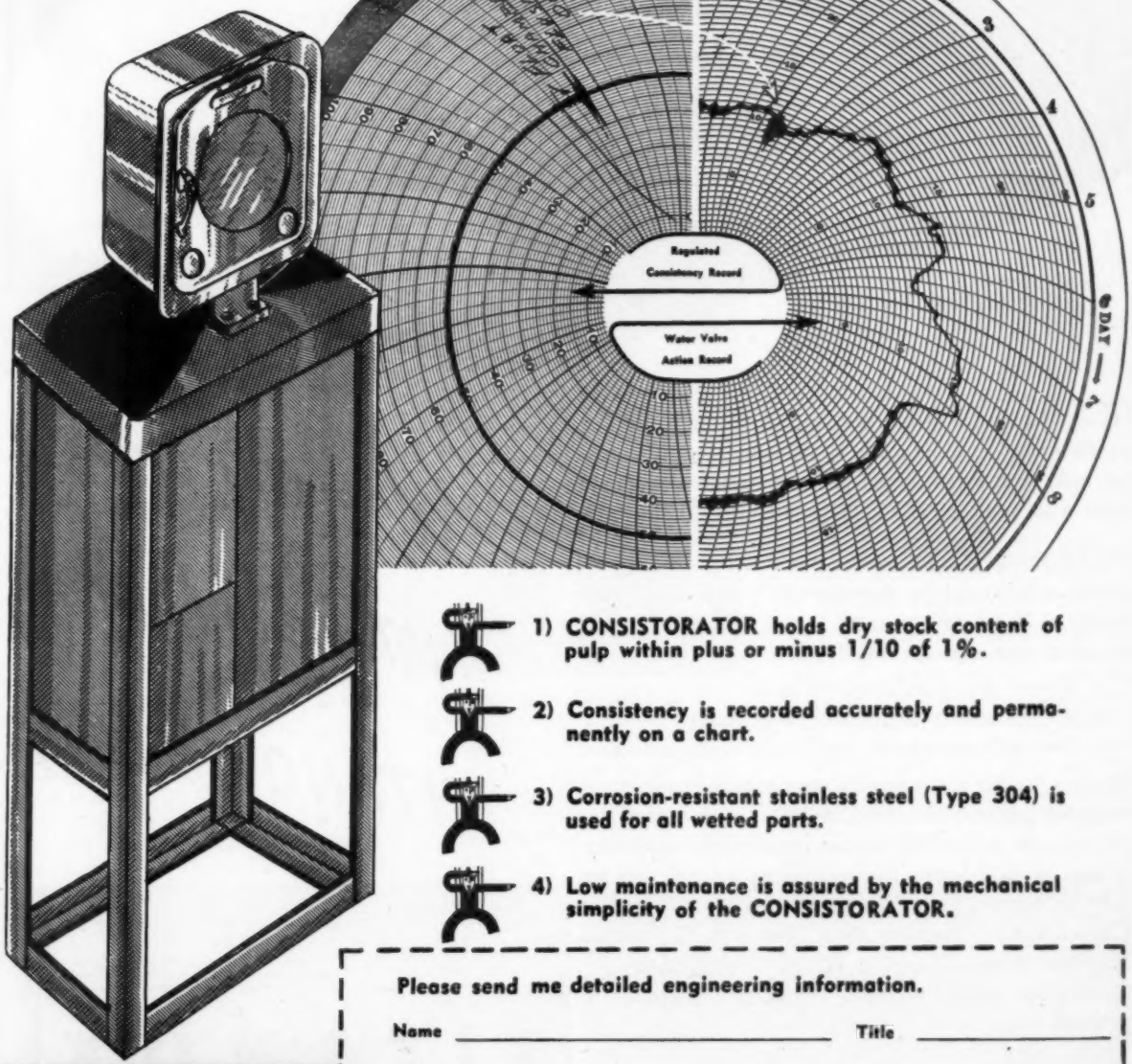
Well known as a former director of the Lake States forest experimental station, Dr. Zon recalled that "we used to have meetings such as this for discussion of what should be done about the problem of saving our forests, but

On the two-day field trip, a portion of the crowd observes the removal of four-year-old transplant stock from Nepco nursery



Spectators view thriving forest during anniversary field trip. Five years ago, area was planted with four-year-old Norway pine

STOCK CONSISTENCY CONTROLLED AND RECORDED WITH THE *New*— F & P CONSISTORATOR



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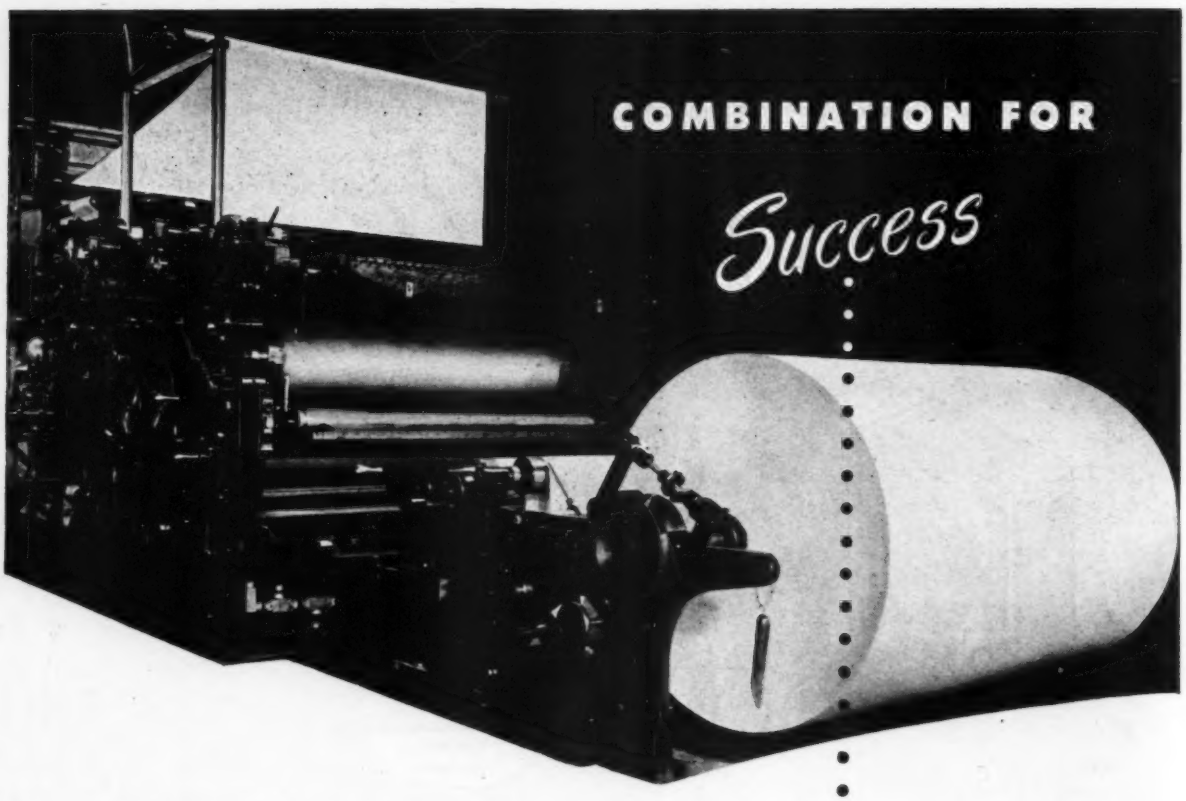

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now we meet to see and hear what has been done . . . In my time, the Lake States were considered doomed as a timber-producing area, but today these states are supplying the great paper industry with an ever-increasing quantity of pulpwood."

Commissioners and Others Speak

Members of the state conservation commission, William J. P. Aberg (Madison) and Douglas Hunt (Wautoma) commended Nekoosa-Edwards for its pioneering efforts and constant forward strides in forest management. One speaker recalled that this year is also the twenty-fifth anniversary of passage of a constitutional amendment authorizing the special Wisconsin mill tax for forestry purposes.

Lyle F. Watts, director of the U.S. Forest Service, and Senator Alexander Wiley sent messages of greeting to John E. Alexander, with regrets that they could not be present. They expressed praise for Nepco's outstanding achievements in forestry.

NEPCO's Forester

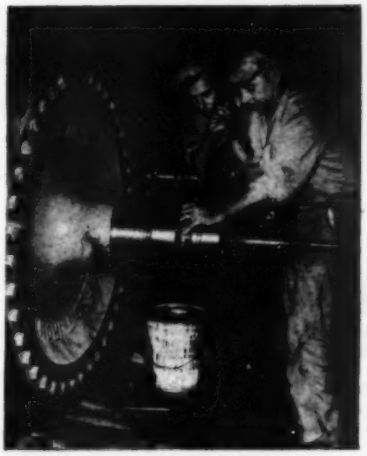
F. G. Kilp, head of Nekoosa-Edwards Woodlands Department, and under whose direct supervision the forest management program has grown, was presented at the dinner. He expressed pride in the fact that since 1926 Nepco has never missed a single year of tree planting, and today is practicing forestry on 110,000 acres of land.

In his introductory remarks as toastmaster, Mr. Alexander quoted statistics to indicate the magnitude of the paper and pulp industry. In Wisconsin, he said, the industry operates 140 paper machines with a daily capacity of 4,600 tons. There are mills in 33 communities, the industry ranking second in the state in number of employees and second in value of products, with a capital investment of $380,000,000.

SECOND NEW FOURDRINIER AT CROSSETT

Preliminary construction and equipment installation at Crossett Paper Mills, Crossett, Arkansas, are moving along speedily. The cast iron foundation plates which will support the new 210-inch fourdrinier for the manufacture of lightweight kraft already have been placed in position and dryer frames for installation of dryer rolls are now in the process of being erected. The nine generators, each of which will furnish power for the operation of a section of the new machine, are being installed.

A unique feature of the generator room is the fact that it will be completely dustproof. All air entering the room will be admitted through oil filters. This arrangement will prevent undue wear and tear on the generating equipment, insuring it a longer and more trouble-free period of operation.



Workers install bearing on first dryer cylinder

Inasmuch as the installation of the second fourdrinier in Crossett's enlarged machine room will increase the temperature, a completely new ventilating system is being installed concurrently with the expansion program. This ventilating system will provide air for mancoolers located at strategic positions on the machine room floor, thus insuring workers as comfortable a working temperature as possible.

The new fourdrinier is expected to be in operation late this year or early in 1950.

▼

HELICOPTERS AGAIN USED BY C-Z FOR RE-SEEDING

The most modern scientific methods are being applied to its reforestation program by Crown Zellerbach Corporation. The company recently begun seeding an area of more than 5,200 acres of logged-off or burned-over lands. Methods employed during the past two years proved the feasibility of restoring trees by employing helicopters for seeding. The restocking program is on lands serving pulp and paper mills at Camas (Wash.), West Linn and Lebanon (Ore.).

The project of seeding is dramatic. Choice cones are gathered, processed and certified, then enclosed in seed pellets which are used in broadcasting. Douglas fir and hemlock predominated in seed cones harvested. Other specimens were: western red cedar, noble fir, silver fir, white fir, and spruce.

Hand planting of seedlings, which will be a far greater project than last year, will begin very soon.

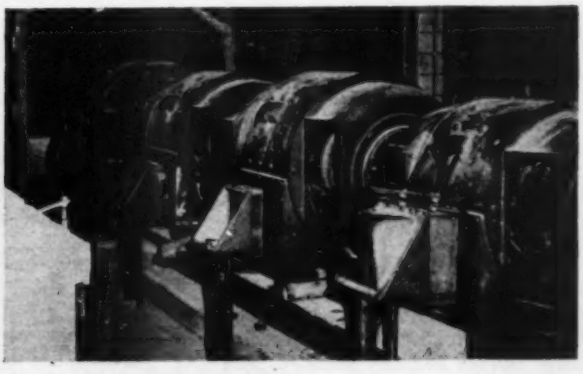
▼

CITY OF SHERBROOKE, QUE., HAS ACQUIRED PROPERTY OF THE BROMPTON P&P CO.

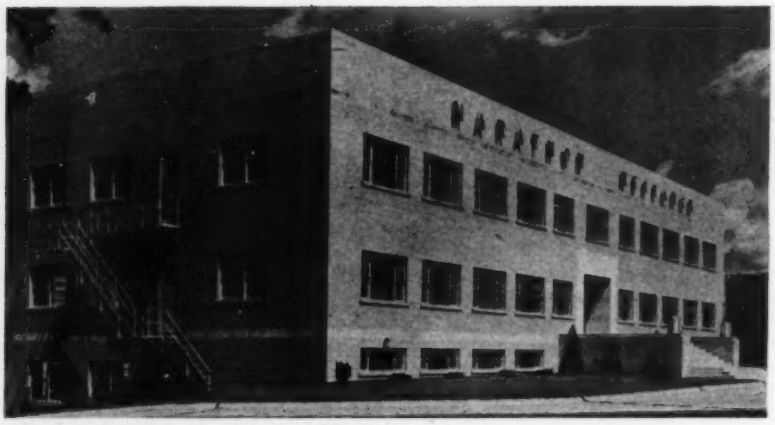
According to a recent announcement, the city of Sherbrooke, Quebec, has acquired the property of the Brompton Pulp and Paper Company, Bromptonville, Quebec.

The cash consideration mentioned in this transaction was $725,000. The City of Sherbrooke has taken over the electric power plant, paper mill, dam, lots and buildings.

Looking towards dry end of new machine



Paper machine drive generator set



Marathon Corporation's new Central Research Laboratory

Marathon Opens New Laboratory

▶▶▶ THE OPENING OF Marathon Corporation's new Central Research Laboratory at Rothschild, Wisconsin, has been announced by D. C. Everest, company president. This fine new building will furnish the company with the most modern facilities for the conduct of its research.

Dr. Allen Abrams, vice president in charge of research, states that the new laboratory will be used for both fundamental and applied research pertaining to the company's products and processes; particularly those relating to wood, pulp, paper and lignin products. Research investigations relating to converted products will continue at Menasha under the direction of Dr. D. W. Davis. G. J. Brabender is assistant to Dr. Abrams, and J. R. Salveson is director of research for the Central Laboratory.

The new building is constructed of structural steel, reinforced concrete and brick, with Indiana limestone trim. The windows are hermetically-sealed double glass, for insulation, and the building is air conditioned. Aluminum hardware and metal work are used throughout the building. Floor covering is a light gray asphalt tile. Fluorescent lighting provides 50 foot-candles of light at the working surfaces in laboratories and offices. Laboratory furniture is constructed of birch in a golden brown finish having table tops with a treated wood surface to resist attack by chemicals and solvents. The principles of color harmony employed in decorating the building produce a pleasing appearance and enhanced functionality of the laboratory.

There are three floors, each containing approximately 8,000 sq. ft. The first floor houses the constant temperature and humidity room, a machine shop, storage facilities and two pilot plants, of which one is two floors in height. The second or main floor is reached through the front entrance. As the visitor enters the reception room, he is greeted by a mural depicting the application of science to the pulp and paper industry. On the same floor are the conference room, library, offices, and two laboratories.

The third floor has three offices and a storeroom, the remaining space being occupied entirely by laboratories, dealing with organic, analytical, physical, and biological chemistry.

▼

Paper Duty Rate Reductions

▶▶▶ BULLETIN released October 11 by Warren B. Bullock, secretary, Import Committee of the American Paper Industry, announces that duty rates have been reduced on practically all coarse papers and all plain paperboards by the Reciprocal Trade Agreement negotiations at Annecy, France. The State Department made this announcement on October 10. The accompanying tabulation shows reductions granted by the United States.

Paper and paperboards originally scheduled for consideration at Annecy on which no duty rate reductions were effected were leather and other shoe boards, gummed paper, drawing paper, valued at under 40 cents per pound, and cigarette paper.

The new rates of duty will be put into effect when the home governments approve the decisions reached at Annecy, but not eariler than January 1, 1950, or later than May 30, 1950.

Under the most favored nation principle, all of the reductions granted to the countries represented at Annecy apply equally to imports from all other countries. Canada, therefore, will be an outstanding beneficiary of the new duty rates. With the exception of shoe board, strawboard, and pulpboard for the manufacture of wallboard (all of which had been previously granted maximum duty rate reductions) the new agreements provide for a duty rate reduction on all plain paperboards. Although imports of "other paperboards" from Finland totaled about $400,000 in value in 1948, imports from Canada totaled a value of $3,750,000 in the first eight months of 1949. Finnish shipments have been chiefly solid woodpulp board for pie plates and similar uses, while the Canadian shipments are largely of kraft screening board for corrugating purposes.

This concession to Finland is a violation of the repeated pledge of the Administration to negotiate duty rate reductions only with the nation which is the chief supplier of the commodity in question.

The reduction of the duty rate on manufacturers of paper will affect all paper products, but particularly paper napkins, serviettes and the like, which are being imported in material quantities from Europe, and toilet paper in converted rolls which is being imported from Canada in increasing volume.

In announcing the results of the Annecy negotiations, the State Department admits that so-called concessions secured from other nations are of little present value. The agreements provide that in times of economic distress any nation may take such restrictive measures as may be necessary. Under this proviso Canada and England em-

Grade	Duty Rate Reduction	Negotiating Nation
Insulating Board	Reduced from 10% to 5%	Sweden
Wallboard	Reduced from 10% to 5%	Sweden
Beer Mat Board, Plain	Reduced from 10% to 7½%	Finland
Fiberboard	Reduced from 10% to 5%	Sweden
Other Paperboard, Plain	Reduced from 10% to 7½%	Finland
Glassine	Reduced from 3c per lb. and 15% to 1½c per lb. and 7½%	Finland
Greaseproof, n.s.p.f.	Reduced from 3c per lb. and 15% to 1½c per lb. and 7½%	Sweden
Reinforced Paper	Reduced from 5c per lb. and 17% to 2½c per lb. and 10%	Italy
Kraft Wrapping	Reduced from 20% to 10%	Finland
Sulphite Wrapping	Reduced from 25% to 20%	Sweden
Other Wrapping	Reduced from 25% to 12½%	Finland
Manufactures of Paper	Reduced from 35% to 17½%	Sweden

X-66 Plugs ARE ALSO TOUGH

X-66 plugs serve longer because they're built stronger—more than twice the usual metal bar support. ¶ X-66 plugs also do better work on the stock because, effective at once, they may be ordered with bars tempered to the degree of hardness that works best on the grades you are running. In other words, you can now order X-66 plugs "tailor-made" Never before has this been possible. ¶ X-66 plugs available for any make, type or size jordan. Bars of steel, bronze, Monel, stainless steel or your particular preference—and don't forget—tempered to the Brinell you specify.

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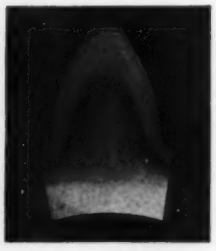
Hard and Tough

this "taper-hardened" tooth bends before it breaks



Taper-Hardened Tooth Section

Case-Hardened Tooth Section

The taper-hardened tooth above bent under the same force that snapped the case-hardened tooth. Yet a test will show wearing surfaces of nearly equal hardness.

The cross sections at the left show why taper-hardened gears have resilience and life under their hard surfaces—why they last longer in punishing service—why they "roll with the punch". Notice the graduated hardness in the taper-hardened tooth—blending down the scale from maximum hardness at the surface to toughness at the ductile core. Compare it with the thin, brittle, shell-like hardness of the case-hardened tooth in which there is no give, no bend.

No wonder "taper-hardened" BP gear steel makes gears last so long.

For complete information on taper-hardening, write for free copy of "BP Gear Steel" B-4395, Westinghouse Electric Corp., Dept.711, P. O. Box 868, Pittsburgh, Pa.

J-07276

Westinghouse

GEARED DRIVES

bargoed practically all United States paper grades on which so-called concessions were granted at Geneva in 1947.

The President on October 5 signed an Executive Order prescribing methods for conducting future Reciprocal Trade Agreement negotiations. England has been promised a further round of duty rate reductions.

Canada to Make Rate Reductions

Press dispatches from Ottawa state that Canada will make 140 duty rate reductions in conformity with negotiations at Annecy. Although Canadian sources expect some paper items may be included the details have not yet been announced.

▼

THREE-YEAR COURSE IN PULP & PAPER INAUGURATED FOR HAMMERMILL EMPLOYEES

A comprehensive three-year pulp and paper course has been established at Penn State Technical Institute, Behrend Center, by the Hammermill Paper Company, Erie, Pennsylvania.

The course is available to all Hammermill men and women. It opened October 6 with a lecture and discussion on "The History of Paper Making," by R. P. Price, Hammermill vice president.

Free to all Hammermill employees, the first year course will consist of 26 lectures of a general nature for which no prior knowledge of pulp or paper is necessary. These lectures are presented on Thursday evenings, but for the benefit of those employees who cannot attend these sessions, each lecture is repeated the following Monday evening.

The second year course is of a more technical nature and is presented on Tuesday evenings to a maximum of 24 employees who must meet certain standards and be approved by an enrollment committee.

The third year course will be offered in the fall of 1950.

▼

POWER IMPROVEMENTS AT ABITIBI P&P CO. NEARING COMPLETION

Finishing touches are now being put on the new wood preparing, grinding and screening equipment and other rehabilitation measures at the Iroquois Falls (Ont.), Canada, mill of Abitibi Power & Paper Company, Ltd., one of Canada's largest newsprint production units.

The new grinders went into production in August. They bring the rehabilitation of five of the company's groundwood pulp mills up to the modernization program envisaged when Abitibi was reorganized under new management in 1946. A modern groundwood mill was completed at the Port Arthur mill in 1948 with the same type of equipment.

The 57 grinders in the old groundwood mill at Iroquois, some being in service since 1914, have been replaced by 20 modern Waterous hydraulic magazine-type grinders, each with a capacity of about thirty-five tons of groundwood pulp per day, housed in a new air-conditioned building of reinforced concrete, completely fireproof.

Power is supplied by 10 motors of 5,000 hp each, and energy will be drawn from the company's generating plants at Iroquois Falls, Twin Falls and Island Falls. Primary screening equipment now consists entirely of Cowan screens, and refiners have been added to treat the coarser screenings. The stock thickening equipment has been improved by the addition of four Sherbrooke filters each having a capacity of 60 tons.

The old grinder room is being converted into a power generating plant with a capacity of 28,000 hp from the Abitibi River right at the mill.

Work Under Way On Panelyte Unit—St. Regis, Kalamazoo

W. E. Kussman

▶▶▶ With W. E. Kussman in charge as plant manager, conversion of the former Time Inc. coating mill in Kalamazoo, Michigan, to a Panelyte production of the St. Regis Paper Company is being pushed rapidly. It is hoped to start production by the first of the year.

The former coating mill was taken over by St. Regis last August (Cf. P.I. and P.W., August, 1949) under an agreement that involved sale of the Bryant Paper Company by Time Inc. two years ago.

The plant will turn out laminated decorative plastics (such as used in table and counter tops). A wide variety of molded laminated plastic parts also will be made for various household and industrial types of equipment.

Kraft paper is used as a base for the operation. Material to be used as surface is impregnated with colored resins while the laminating material also is of kraft paper. Recently, Panelyte introduced a series of printed patterns in color which formed a decorative contrast to colored laminated plastic sheets.

The St. Regis company has broadened its list of distributors. The bulk of Panelyte distribution will be handled by the Kalamazoo plant. Panelyte plastics for many types of industrial applications will be made, as heretofore, at the company's principal plant in Trenton, New Jersey.

At present, excavations are being made inside the old coating mill building for the huge foundations for the battery of hydraulic presses. In addition to the presses, other processing and fabricating machinery is being installed. To the east of the present building, an accumulator building is being erected to house the high and low pressure pumps for press operation. The former will produce pressures up to 3,500 pounds psi, according to Mr. Kussman. The laminating process calls for an approximate average pressure of 1,000 pounds psi, with the huge sheet presses calling for far higher pressures than the average.

Another job now in process is that of remodeling the former clay coating preparation department for manufacture of laminating varnishes.

Mr. Kussman was transferred to the Kalamazoo plant from the St. Regis Panelyte Division at Trenton where he has worked for the past four years.

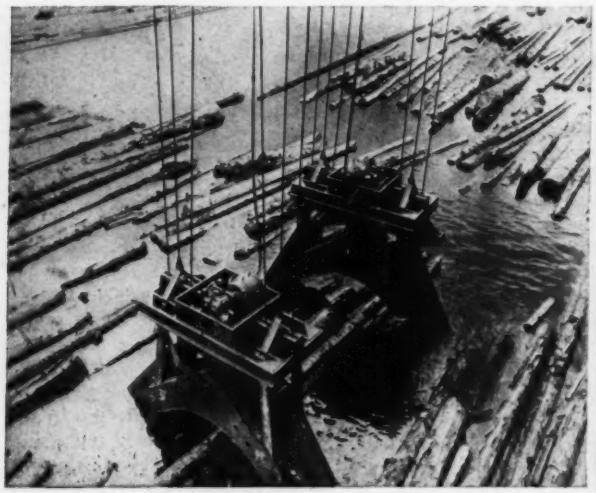
AMERICAN CAN BUYS SITE FOR NEW CONTAINER PLANT

Purchase of a 43-acre tract on the southwest limits of Baltimore from the B&O Railroad as the site for a new plant to produce paper mill containers has been announced by American Can Company.

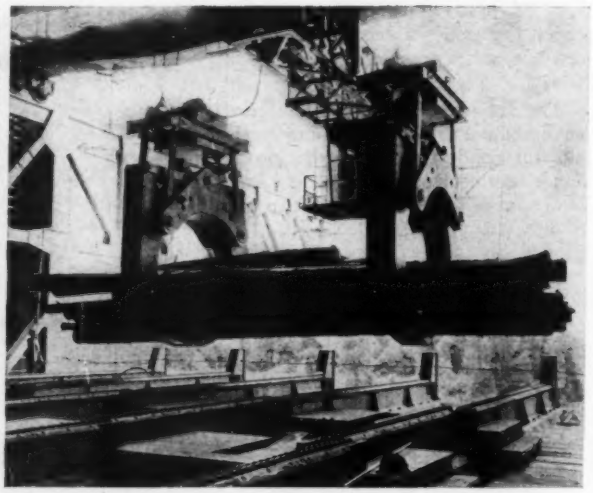
According to present schedule, the plant will be completed within a year. It will have approximately 150,000 sq ft of floor space at the start, with provision for future expansion. It is expected that the new plant will employ approximately 250 persons.

▼

▶▶▶ OPENING OF ITS NEW corrugated box plant at Belleville, Illinois, is announced by The Eddy Paper Corporation. The one-story building is of brick with steel sash and contains 100,000 sq ft of floor space. It is expected that 150 workers will be employed in the manufacture of about 2,200 tons of corrugated boxes per month. Nicholas Scharff is district manager of the company and Harvey Moore is resident manager.



Giant grapples picking up log bundle



Logs are hoisted to log deck

New Wood Mill at Crown

▶▶▶ A RADICAL CHANGE in the method of processing wood for the pulp and paper industry was effected some six years ago through the development of special equipment in the Northwest. Fundamentally, these changes were the development of (1) the hydraulic barker, and (2) of whole log chippers. The new wood mill at Camas embodies the latest design of such equipemnt together with other equipment especially designed for the company's operation.

Bundle Rafts Used

Until a few years ago, all logs were received at the mill in flat rafts. Recently, however, due to the change in logging methods, a considerable portion of logs used have been received in the form of bundle rafts. With this method, a complete truckload of logs is banded with strap iron and lowered into the river. State regulations regarding load limits on highways have, in general restricted the weight of these individual bundles to 40,000 pounds. However, the Crown Zellerbach Corporation recently has built private logging roads upon which there are no state restrictions as to load limit, and it is presumed that individual bundles of logs weighing up to 100,000 pounds will have to be handled at the mill.

In the past, the handling of bundle-type rafts at the mill has presented a problem in that upon breaking the bands some of the logs would sink. Prior to the application of the bundle-type raft, the sinker problem was confined mostly to the raft booming areas at the logging operations. Transferring of this problem to the mill operations caused considerable trouble to the extent that it has been necessary to bring in a digger barge about once a month to remove sinkers from the log pond.

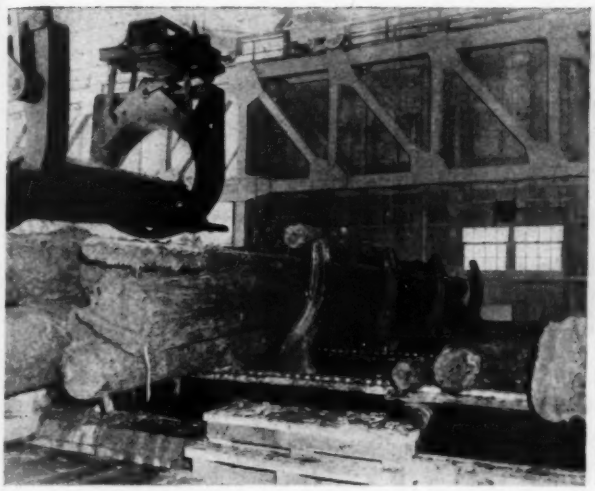
New Type Log Hoist

To eliminate this problem, the equipment for handling logs to the deck of the new mill is designed along radical lines. The new mill does not have the conventional type of log haul, or even the par buckling type of hoist which is used in a few mills. Instead, it is equipped with a Berger Engineering Company bridge crane having two hydraulically-operated log grapples either of which may be raised or lowered independently.

A Berger warping hoist is provided to move the log rafts under the bridge crane and grapples. This is a two-drum hoist driven by a 25-hp wound rotor induction motor and provides for speeds of 2 fpm, 5 fpm, and 20 fpm on the hauling line, and 100 fpm on the haul-back line. It is remotely controlled some 150 ft away by the boom men.

The bridge craneway is approximately 270 ft long, 200 ft being above the log deck, and 70 ft being cantilevered over the waters of the Camas slough. The crane and grapples are designed to handle bundle rafts up to 65 ft in length, having a net weight of 100,000 pounds. The bridge crane rails are located at an elevation of 95 ft and the log deck at an elevation of 63 ft. These elevations are above the zero level of the river. The water level ranges from —2 ft to +38 ft, but it is normally around a 10-ft stage.

Hoists are designed for full hoisting speeds of 25, 40, 70, and 146 fpm, with a bridge speed of 100 fpm and a trolley travel of 80 fpm. Hoisting power is provided by two 100-hp wound rotor induction motors, one for each grapple, with Westinghouse reactor-type control. The 13-ton grapples are opened and closed hydraulically by means of a 40-hp motor-driven pump mounted in a waterproof casing on the grapple itself. The motor is supplied from a drum carrying tyrex cable which plays out or reels in at the same rate that the grapples travel. The grapples open to 14 ft wide, and when closed, will encompass a bundle of logs up to 10 ft in diameter; they also can pick up logs from a flat raft. The capacity of this equipment for handling logs will range from 50,000 fbm per hour when handling small loads of around 30,000 pounds net to a capacity of 90,000 fbm per hour when handling heavy loads in the range of 80,000 pounds net. These capacities are established under maximum lift conditions, that is, when the river is at its lowest stage.



Bundles are then cut open

Long logs are cut into 24-ft lengths

Zellerbach, Camas

Bundles of logs are deposited by the crane on the transfer chains of the log deck. These chains carry the bundle to a series of pneumatically controlled arms which can be raised or lowered from the floor to encompass the bundle and hold it while the bands are cut. Upon removal of the bands, the rear set of bundle arms are lowered, allowing the logs to spill out on the transfer chains of the log deck. From this point, the logs are transferred to the swing cut-off saw. This saw is a 108-inch diameter circular saw driven by a 75 hp motor. Here the logs are cut into 24 ft lengths, and are discharged to the transfer chain which feeds the hydraulic barker.

Hydraulic Barker

The hydraulic barker is a modified Bellingham type. The modifications are embodied in the design of the nozzle arrangement, and the entire barker control system as a result of experience gained from the operation of a pilot unit designed by the Camas Engineering Department. This unit has been in operation for the past two years at the old wood mill. The barker control is designed to rotate an 84-inch diameter by 24-ft long log in the trunnions at any selected speed from one to forty rpm in either direction, and to move the nozzle carriage along the rotating log in a forward or reverse direction at any desired barking speed. The nozzle can be raised or lowered pneumatically through a range of 78 inches. Stepless speed control of trunnions and nozzle carriage is obtained by direct current motors having Westinghouse Rototrol regulators. An outstanding feature of the control is the airplane type operating wheel which houses all the necessary switches and devices to fully control the barker and make operating simple and convenient.

Spudding & Inspection

Following the hydraulic barker operations, the logs are discharged to a transfer chain which moves them to the spudding and inspection station. This is another piece of equipment which was designed especially for the Camas Mill and has never previously been used in any other wood operations. Instead of spudding the logs as they travel on the transfer chain which is the general practice in most mills, in the Camas operation the log is first transferred to a conveyor having a set of corrugated "V" rolls. In the space between the rolls is a pneumatically controlled arrangement of chains and sprockets which allow the log to be lifted up off the "V" roll conveyor and rotated slowly. Any necessary spudding is done at this station, following which the log will be lowered again and conveyed through the log washer.

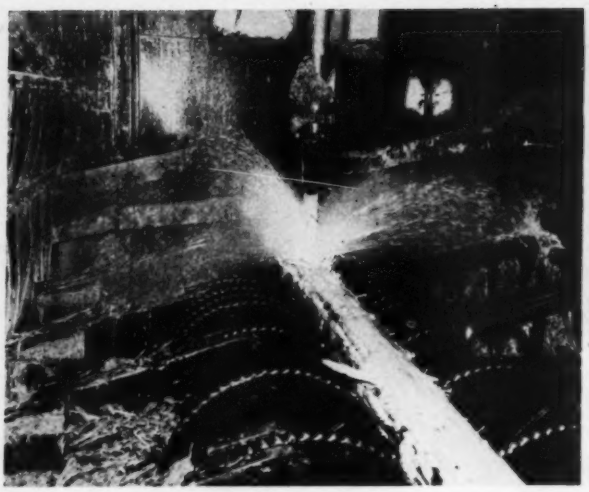
The log washer washes the entire log with six high pressure nozzles. From the washer, the logs are delivered to the chipper transfer chain.

Whole Log Chipper

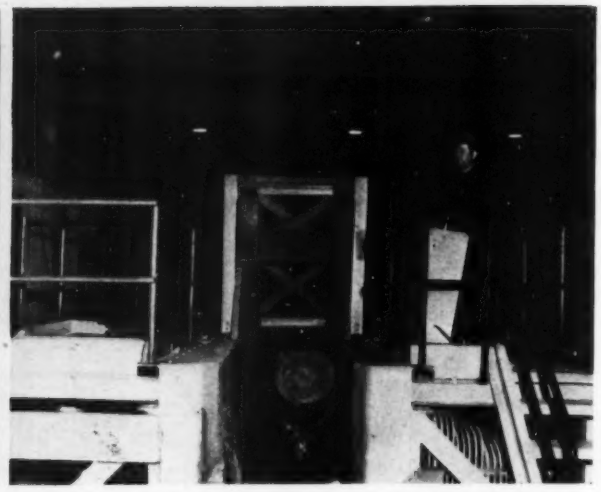
The whole log chipper is a Sumner 6 knife-153 inch diameter two anvil chipper driven by a 1500 hp, 7000-v, synchronous motor. Logs up to 34 inch diameter can be processed by this chipper. One of the most remarkable features of these whole log chippers is their capacity. This 153 inch chipper, if supplied with logs of 30 inch diameter end to end in a continuous stream, would convert to chips over 200,000 ft board measure of logs each hour. The Camas Mill maximum daily requirements are approximately 650,000 fbm. This is the first of the large log chippers above 110 inch diameter to be equipped with a sloping bed knife. This change was made in the expectation of obtaining a quality of chip that would compare with the 110 inch and smaller chippers. Chips are discharged from the chipper to a 72-inch width rubber belt conveyor which transfers the chips to concrete chip storage silos.

There are four of these silos, each 44 ft in diameter by approxmiately 75 ft high. Each silo has a capacity of approximately 400 units of chips. Chips are discharged from the silos by Link-Belt mechanical feeders to a 42-inch belt conveyor which transports them to the screen room.

The screen room is equipped with four 6 ft by 16 ft Allis-Chalmers double deck vibratory type screens, and space has been made available in the screen room building for an additional screen



Hydraulic barker in action



Log entering whole log chipper

if and when it becomes necessary. A 36 inch Sumner disc type rechipper is installed. From the screen room, chips are transported eastward by 36 inch belt conveyors and then northward across the SP&S railroad tracks and east again to tie in with the conveyors from the old chip plant to the pulp mills.

Auxiliary Equipment

Some of the auxiliary equipment at the new mill is also worthy of mention. The Worthington pump for supplying the hydraulic barker is designed for capacity of 1,200 gpm and 1300 pounds pressure. The pump is driven by a 1250 hp, 7,000-volt squirrel-cage induction motor. A 1,000 cfpm duplex air compressor driven by a 200 hp synchronous motor provides compressed air at 125 pounds pressure for the operation of the various control cylinders throughout the wood mill. A 62-ft span bridge crane with capacity of 40 tons is installed over the 153-inch chipper. This was primarily purchased for the installation of the chipper, but will be available in the event of a major maintenance job on the chipper.

A Sumner No. 65 Vee type hog is installed in a separate building adjacent to the wood mill, and space is provided for a second unit if and when desired. The hog is driven by a 200 hp motor.

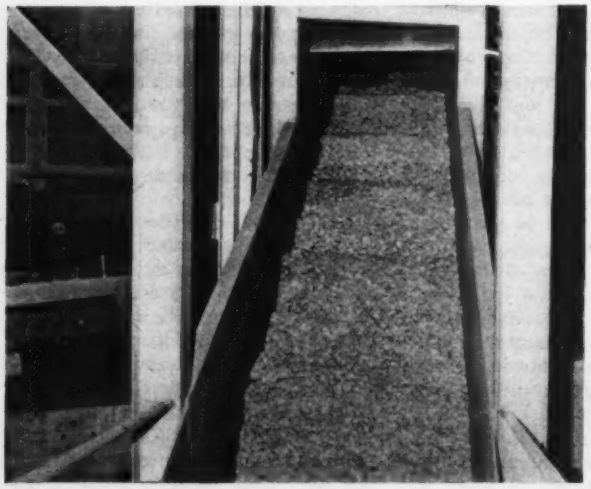
Power is supplied by one 7,200-volt line and one 2,300-volt line. 7,200-volt service feeds the barker pump motor and chipper pump motor direct, and, in addition, the 550-volt load center. The 2,300-volt service feeds the air compressor motor, hog motor, and 72 inch belt drive. Switchgear, load centers, motors and control were furnished by Westinghouse.

Log and transfer chains were supplied by Sumner Iron Works, gear reduction units were manufactured by Western Gear Works.

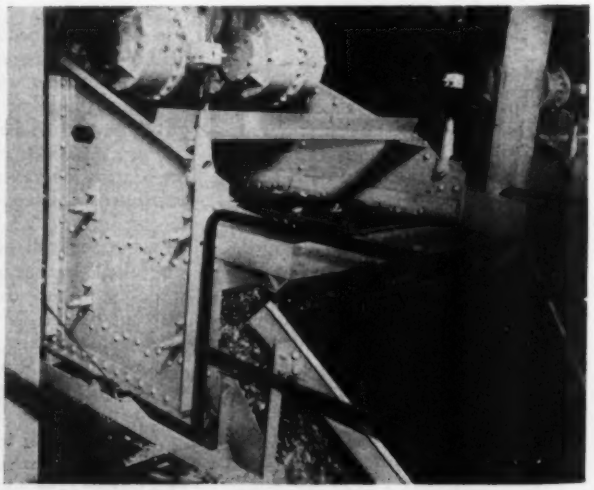
The first stage of the new wood mill does not include a head rig for breaking down large logs to the 34 inch size of cant which the chipper can handle. As a result, it will be necessary to run a part of the old wood mill on large logs. Eventually a head rig, supplementary barking equipment, and possibly one smaller chipper will be added to allow discontinuing all operations at the old wood mill. Four additional chip storage silos are also contemplated in the final scheme.

The Old Way

The differences between the method of preparing wood in the old and new wood mill might be interesting, and can best be exemplified by considering the handling of a log 30 inch in diameter and 24 ft in length. (In the new



Chips on flight conveyor



Chips discharging from screen

mill, it would not be necessary to put a saw cut in this log at all. It would be barked and chipped in the whole log form.)

In the old mill, such a log would first go to the band saw head rig. Here two saw cuts would be made cutting the log into 10 inch by approximately 30 inch by 24 ft slabs. The slabs would then pass through the edger saws where each slab would have two more saw cuts made. Thus, from the edger would come 9 cants approximately 10 inch x 10 inch x 24 ft. The cants would then pass through the slasher saws where eleven more cuts would be made converting each cant in blocks of wood two feet in length. Thus, a total of 107 saw cuts would be necessary to break down the log into 108 blocks of wood. As the width of the saw cuts vary from ¼ to ⅜ inch, one can easily appreciate that there is a considerable loss of wood from saw kerf.

Ninety-six of the 108 blocks will have bark on one side and must pass through the drum barker. Here the bark is removed by tumbling the blocks in a rotating drum. It is necessary to inspect all blocks discharged from the drum barkers, and it is also necessary to sort and return to the drum barkers for rebarking from 30 to 50 per cent of the blocks depending upon the tightness of the bark. Accepted blocks from the barkers and inside wood blocks are routed through conveyors and then by flume to the old chipper plant about ¼ mile away.

Review of New Lawsuits Affecting the Paper and Pulpwood Industry

LEO T. PARKER
Attorney at Law

▶▶▶ IT IS CERTAIN THAT a mill official or employee who is 100 per cent proficient in legal matters never would do anything, or make any agreement, which would cause his company to lose a lawsuit. This is so because he would naturally make all contracts and various other business deals in due consideration of the established law, and prepare to defend successfully all future law suits.

Quite obviously, no official or employee may become 100 per cent proficient in knowledge of the general law. Nevertheless, the realm and legal transactions of persons employed in paper and pulp mills is relatively small when compared with the broad expanse of general law. Hence, readers may readily, and without consuming a great deal of time, acquire sufficient knowledge relating to contracts, agreements, and relevant matters prepare to win a great majority of future law suits. Therefore, the purpose of this article is a review of outstanding late and leading higher court decisions affecting the paper and pulp industry.

Recently a reader wrote, as follows: "Our company purchased a tract of land on which is pulpwood, some standing and some already cut. We contend that we own both the standing and cut pulpwood, whereas the person who cut the pulpwood claims that he owns it. Is this so? Since this controversy involves a considerable sum of money we would appreciate your assistance in straightening out this matter."

According to a recent higher court a purchaser of real property owns *nothing* detached from the real estate.

For example, in Well v. Sellers, 46 S. E. (2d) 205, the testimony showed facts, as follows: One Sellers purchased a tract of land on which was a large quantity of pulpwood already cut by one Well who had a previous arrangement of the seller of the land to cut the wood. Sellers sued Well and asked the court to prevent him from taking the wood from the property. The higher court refused to do so, saying:

"Anything detached from the realty becomes personalty immediately upon being detached therefrom; thus, Sellers did not purchase the pulpwood which had already been severed from the realty at the time the deed to the land was made to him."

Not Accident

Recently a higher court held that an employee who acquired a disease while attending to his regular work cannot recover compensation.

For example, in Martin v. Brown Paper Mill Company, Inc., 35 So. (2d) 140, it was shown that an employee entered the employ of the Brown Paper Mill Company, Inc., in June, 1944. His employment consisted of working in the caustic alkali liquid room, in which room he tested the liquid and, also, dipped the caustic from one vat into another. The steam from the fluid blew into his face and over his body, and his face, hands, arms, and other exposed parts of his body were subjected to contact with the liquid. During the latter part of 1946, the employee was affected by a rash on his body, hands, arms, and face which caused a severe itching and stomach pains. In 1946, the employee learned that his condition was incurable and that he would suffer for the remainder of his life. He sued for compensation under the State Workmen's Compensation Act.

The higher court refused to award compensation because the disease was an "occupational disease," not compensable as arising from an "accident" within the scope of the state laws.

For comparison, see Stiles v. International Paper Company, 39 So. (2d) 635. In this case a paper company's employee sued for compensation. The testimony showed that he was suffering from an abcess in his lung and an enlarged heart caused by heavy work and the great amount of dust inhaled by him while in the employment. This court awarded compensation saying that where the work of the employee entails regularly heavy physical effort, it is not necessary that the injury from which

disability follows be the result of unusual physical effort. The court said:

"If a diseased organ gives way while the laborer is performing his usual and customary heavy duties, and disability results, it is compensable."

Insurance Company Refused Payment

It is well established law that an insurance company *never* is liable for payment of a loss unless the insured *proves* that his loss is within the scope of the policy. This rule of law is applicable to *all* insurance policies, including insurance against accidental damage to machinery, engines, and equipment.

For example, in Inland Empire Paper Company v. Hartford Steam Boiler Inspection & Insurance Company of Hartford, Conn., 169 Fed. (2d) 653, it was shown that the Inland Empire Paper Company held an accident insurance policy on a stationary steam engine. One day during the operation of the engine something occurred which caused the engine to run wild and to cause considerable damage. The insurance company refused to pay the loss claiming that the damage to the engine did not result from an accident.

Since the paper company failed to prove that the damage was caused by an "accidental occurrence," the higher court refused to hold the insurance company liable on the insurance policy, and said:

"The plaintiff (Inland Empire Paper Company) had not sustained its burden of showing the trouble as having originated through an accident to the insured mechanism."

Must Prove Contention

According to a recent higher court if officials of a paper corporation fail to prove that the United States Tax Commissioner incorrectly computed the corporation's taxes, based on the Commissioner's conclusion, must be paid.

For example, in Fox River Paper Corporation v. United States, 165 Fed. (2d) 639, the Fox River Paper Corporation sued the United States for income taxes which the corporation alleged it overpaid. The testimony showed that the Fox River Paper Corporation purchased a paper mill from the Fox River Paper Company for $1,250,000 in cash and all of the corporation's authorized preferred stock consisting of 5,000 shares of a par value of $100 each, or $500,000. The Commissioner concluded that the preferred stock was worth only $250,000 at the time the property was acquired instead of $500,000 as claimed by the taxpayer, and increased the tax accordingly.

The higher court decided that the Commissioner was correct since the paper corporation failed to prove positively that the preferred stock was worth $100 per share.

Not Deductible

Considerable discussion has arisen from time to time over the legal question: In states having the intangible property tax statute what accounts are payable and deductible. A recent higher court held that wage taxes on employees are not deductible.

For example, in Chillicothe Paper Company v. Glander, 82 N. E. (2d) 413, it was shown that a paper company withheld money from the wages of its employees under the provisions of the Internal Revenue Code. It was required to pay this money to the Collector of Internal Revenue on or before January 10. The company in filing its tax return for the tax year listed this item as a current account payable in computing its nontaxable credits for the tax year.

In subsequent litigation the higher court held that the only accounts payable which may be taken into account in determining the taxable credits, are those that accrue or are incurred in the business of the taxpayer. Hence the court decided that money withheld from employees by a taxpayer who is required to pay it to Collector of Internal Revenue is *not* an "account payable" deductible in determining intangible property tax, but is a mere liability.

Also, this court held the postwar refund credits on account of excess profit taxes imposed by the Federal Government are not taxable under a state intangible tax statute.

For comparison, see the late case of Champion Paper & Fibre Company v. Glander, 82 N. E. (2d) 417. This court held that prepaid premiums on insurance are not subject to intangible tax.

Others Pollute Stream

Not long ago a reader asked this question: "Only a few weeks ago we started discharging foreign substances into a running stream. We are being sued for this violation. We can prove that refuse from several other plants has been discharged into the streams for many years. Will this evidence assist us to win the suit?"

The answer is *no*.

For illustration, in Jessup & Moore Paper Company v. Zeitler, 24 Atl. (2d) 788, it was disclosed that a paper manufacturing company began emptying waste from its paper mills into a stream causing the stream to become offensive and the water to taste and smell.

The counsel for the paper company argued that it should not be held liable because others also were polluting the stream. In refusing to hold that this fact relieved the paper company from liability, the higher court said:

"It is held by the weight of authority that a riparian proprietor may maintain a suit against several upper proprietors to restrain them from polluting the stream by depositing refuse therein, where the acts of the defendants contributed in creating the nuisance and producing the injurious result, even though the defendants were acting independently and not in concert or by unity of design."

Federal Labor Law

Considerable discussion has arisen from time to time over the legal question: What acts and statements of a foreman violate the federal labor laws?

According to a recent higher court mere isolated expressions of minor supervisory employees, which appear to be nothing more than the utterance of individual views, *not authorized* by the employer and not of such a character or made under such circumstances as to justify the conclusion that they are an expression of the employer's policy, it is not a violation of the law.

For illustration, in National Labor Relations Board v. Hinde & Dauch Paper Company, 171 Fed. (2d) 240, the testimony showed that a foreman asked an employee as to how he intended to vote in an employees' election, and also the foreman stated to another employee, that, if the plant were organized and the union called a strike, the employer could close the plant down.

The higher court refused to hold that these statements by the foreman violated the Federal labor laws.

For comparison, see N. L. R. B. v. Mathieson Alkali Works, 114 F. (2d) 796, 802. This higher court held that the employer violated the labor laws if the evidence showed that foremen spoke with the authority of the employer, or if their expressions of anti-union sentiment were so numerous as to justify the inference that they were made with the employer's approval.

And again see National Labor Relations Board v. Whittier Mills Company, 111 F. (2d) 474, 479. This court said:

"Isolated speeches made by underlings, though having some authority, which are not authorized or encouraged to the management, ought not to be too quickly imputed to the employer as his breaches of the law."

Court's Jurisdiction

Considerable discussion has arisen from time to time over the legal question: When is a corporation "doing business" within a state? Another im-

portant question is: Can a Federal Court compel a corporation in the United States to bring its books into this country from a foreign country?

For example, in Grand Jury v. Canadian International Paper Company, 72 Fed. Supp. 1013, the testimony showed facts, as follows: The Canadian International Paper Company paid rent for an office in New York and salaries to employees to maintain this office. Also, the corporation had an active and substantial bank account in New York. It shipped paper into New York, and its president, two vice presidents, and treasurer were in New York.

The federal court held that although the corporation's records and documents were physically located beyond the United States, this fact did *not* excuse the corporation from producing its records in an investigation conducted under the Sherman Act.

Scope of Employment

All courts hold that an employee is *not* entitled to compensation under the State Workmen's Compensation Act for injuries received while acting "outside" the scope of his regular work. However, according to a recent higher court, an employee remains "within" the scope of his employment while assisting another employee to prevent damage or loss of his employer's property.

For example, in Demetre's Case, 76 N. E. (2d) 140, it was shown that an employee suffered a fractured arm when assisting a fellow employee to operate a machine.

The higher court held that although the employee was injured while attempting to assist a fellow employee, yet he was entitled to compensation under the State Workmen's Compensation Act.

Not Legal Agent

According to a recent higher court neither a foreman nor a superintendent of a paper or pulpwood plant can bind his employer to pay compensation to an injured employee. Neither can the employee rely upon promises made by a foreman or superintendent.

See West Virginia Pulp & Paper Company v. Morton, 45 A. (2d) 725. Here assurance was given an employee by his superintendent that his claim for compensation would be taken care of. The court held that since the superintendent had no authority to bind the employer any and all promises made by the superintendent to the employee were void.

Also, see the new higher court case of Champness v. Glenn L. Martin Company, 66 Atl. (2d) 396. Here it was shown that an employee was hired to work in a paper mill. The dust incident irritated his respiratory system, and he visited his employer's dispensary for treatment of what he then thought was a cold. Later he went to see a specialist who told him his tissues were badly damaged.

In subsequent litigation the higher court refused to award the employee compensation although he depended on promises made by a company's official that he need not file his claim within one year as required by a state law. The court said:

"To bind an employer the facts and circumstances must be produced, by an agent who has real or apparent authority to speak for the employer in compensation matters. It is not sufficient that such an agent is a plant foreman or an engineer."

Trade-Mark Law

Very many readers have had in mind this legal question: When does a trade-mark infringe another mark: and how *close* can a new trade-mark be to an older mark and yet infringement is avoided?

First, it is important to know that the answer to this question depends upon these facts: Is the new trade-mark used on goods of the same classification? If so, will the purchasing public be deceived into believing that it is purchasing goods made by one manufacturer when in fact it is getting goods manufactured by another manufacturer? If so, infringement exists.

For the past several years, the higher courts have held that two *identical* trade-marks may be used by two different manufacturers of goods in different classifications. This is so because the buying public will not be confused into believing such purchasers are buying the goods of one manufacturer when in fact they are buying the goods of another and different manufacturer.

For example, assume that the manufacturer of paperboard has used for many years a trade-mark. Then along comes another company which manufacturers stoves, or chewing gum, or bread, or automobile supplies, or drugs, or goods of any other kind in a classification different from paper products. It is certain that the paperboard manufacturer cannot stop use of its trade-mark by any of these manufacturers.

Now, also, assume that two manufacturers of paperboard are located in far removed locations. Say, one has used a trade-mark on its goods in the Northern section of the United States for many years, and during this same period another manufacturer has been using the identical trade-mark on paperboard in the southern part of the United States.

Hence, these two manufacturers have different customers to whom are sold different products under the same name. Both manufacturers have established their respective customers. The higher courts hold that both manufacturers may continue to use the same trade-marks in *their* own territory, but neither may offer for sale its goods in the territory of the other. Thus, by this plan the buying public will not be confused into believing that it is purchasing the goods of one company when in fact it is purchasing the goods manufactured by another firm.

Now, again, assume that two manufacturers of paper, and paper products have adopted similar trade-marks; that is, marks having characteristically the same and similar appearance in printed form, or when spoken. It matters not how different these two trade-marks may at firsthand appear to be. It is certain that the new mark infringes the older mark if the similarity is such that the buying public may be confused. For example, a trade-mark displaying the word "Atlas" infringes a trade-mark containing a map or similar indications, irrespective of the name of the product. And it has been held that a trade-mark containing the portrait of a negro is exclusive and that all others who utilize the portrait of a colored person are infringers. This court said that one who adopts a trade-mark containing any symbol or word similar to that used in an older trade-mark is an infringer.

The law of trade-marks is based on the law pertaining to unfair competition. See the late case of Allied Paper Mills v. Federal Trade Commission, 168 Fed. (2d) 600. This court clearly held that a "uniform participation by competitors in a particular system of doing business" indicates unlawful conspiracy especially if each competitor is aware of the acts of the others. Hence, it is unlawful conspiracy for a group of manufacturers to agree upon uniform prices, by means of a zoning system of price quoting which utilizes delivered prices of competitors at a given destination.

Infringement of a trade-mark is unfair competition affecting the older manufacturer, and "price fixing" is unlawful as affecting the buying public. In one instance the buyer is protected against purchasing goods he believes was manufactured by another manufacturer, and in the other instance the buyer is protected against two or more manufacturers agreeing upon a price structure having no basis, except unreasonable profits without regard to actual costs of production and distribution. See Socony, 310 U.S. 221. Here the Supreme Court of the United States held that unfair competition is any means or acts designed to ultimately prove deceptive to purchasers.

Magnetic Separators Eliminate Tramp Iron

FRED E. HUMMEL, JR.
St. Joe Paper Company

▶▶▶ TRAMP IRON is eating steadily into the profits of every paper and paperboard mill in this country. The increased depreciation on equipment that can be attributed to the destructive forces of tramp iron are responsible for an appreciable percentage of maintenance costs. In view of the degrees of process refinement and the amount of tramp iron in wood supplies, it is inevitable that some mills feel the effects of tramp iron to a greater or lesser degree than others. Yet no producer can overlook the fact that tramp iron is always present in his system, and it is always expensive.

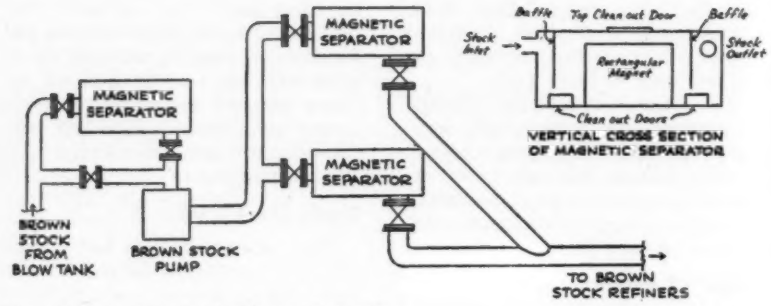
We at the St. Joe Paper Company (an operating division of the estate of Alfred I. du Pont) have taken steps to curtail this factor of needless expense. But, we didn't just take this matter in hand out of the problems of normal operation as we should have some time ago. It took the driving force of necessity to make us think seriously of the innovation.

During the past year or so the company played a prominent role in the development of the utilization of brown stock refiners, employing a refiner previously proven only on washed stock. Here the brown stock is partially refined prior to washing.

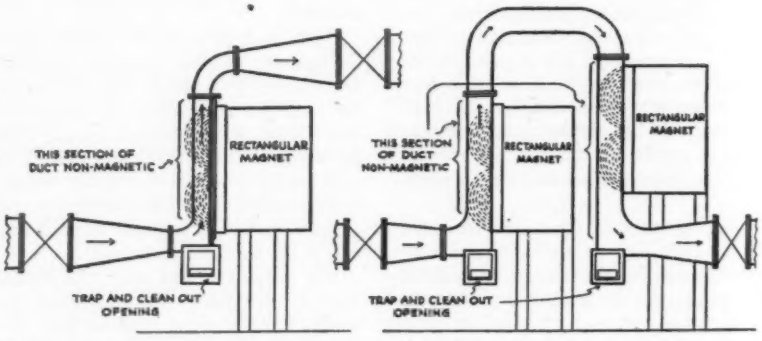
With the wood supply located in turpentine areas, it was imperative that we eliminate the tramp iron from our system before we installed our refiners, with their expensive and vulnerable discs.

It was realized that to clean our system effectively, we would have to employ magnets both on the chip belt and on our stock lines. We installed two magnets on our chip belt, suspended parallel to the belt approximately two inches above the estimated maximum height of the burden. The magnets were hung from geared trolleys so that they might be pulled off the belt and discharged. We also installed a magnetic pulley tangent to the line of chip flow at the belt discharge point at the chip bin.

The manufacturer of our magnets maintains that the most effective and economical chip belt installation is simply a permanent or electromagnetic pulley driving the head of the belt. We have found our more elaborate and expensive installation to be well worth its cost where there is a large quantity of tramp iron in the wood supply.



Magnetic separators ahead of brown stock refiners



Two methods of arranging rectangular magnets on stock line

The number of chip belt magnets in a particular installation is determined by the speed of the belt and the depth of the burden. Two are sufficient for most operations; two are the minimum if you would be able to discharge the tramp iron without leaving the belt unprotected.

An improved installation that is now available consists of a self-cleaning magnet. This function is made possible by the use of two large pulleys which carry a belt, studded with nonmagnetic cleats, around the magnet. This belt deposits the collected tramp iron to one side as fast as it is separated from the chips.

Though the chip belt magnets will collect the majority of loose tramp iron that originates in the wood supply, stock line magnets are necessary to separate the small particles that prior to cooking were embedded in the wood and to collect those particles that enter the system further along in the process.

We utilize a practical magnet box of the Bathhurst type. The stock enters a settling chamber, is forced under a baffle and over the magnet through a constricted area into the second settling chamber, and discharges out into the line under a baffle. Cleanout doors are located in the sides of both settling chambers as well as directly over the magnet. The progress of the tramp iron through the field of magnetic attraction is further impeded by ¼-inch x ¼-inch riffle bars. The magnet box is prevented from being magnetized by a stainless steel cover, fitted to the box with angles and a rubber gasket. The box is constructed of ¼-inch plate with 3½-inch x ½-inch stiffeners to stand 75 psi.

We installed three magnets on our brown stock line. The first magnet is fed directly from the blow tank and discharges through the brown stock pump to two magnets ahead of the Claflin refiner, which prepares the stock

for the Sutherland brown stock refiners.

It is always advisable to hook up two or more magnets in series with adequate by-pass facilities. This installation gives better protection and permits cutting individual magnets out of the system one at a time to be cleaned out.

The time a magnet should be allowed to run before being cleaned out is of course indicated by the extent of tramp iron in a particular installation. As a general rule, this should be attended to weekly.

Our magnets are proving very economical and satisfactory. It is now quite evident that such a protective installation would have been most practical even before we installed brown stock refiners. We would have realized probably more than double the usual life of our jordan bars and found we could expect longer and more efficient operation from our Weiner refiners.

We are at present installing a magnet box on our washed stock refiner feed to pick up any tramp iron that may have entered the system past the brown stock refiners.

Our 36-inch wide, high intensity, waterproof, rectangular enclosed magnets are manufactured by Dings Magnetic Separator Company. The power consumption is 1,400 watts per magnet.

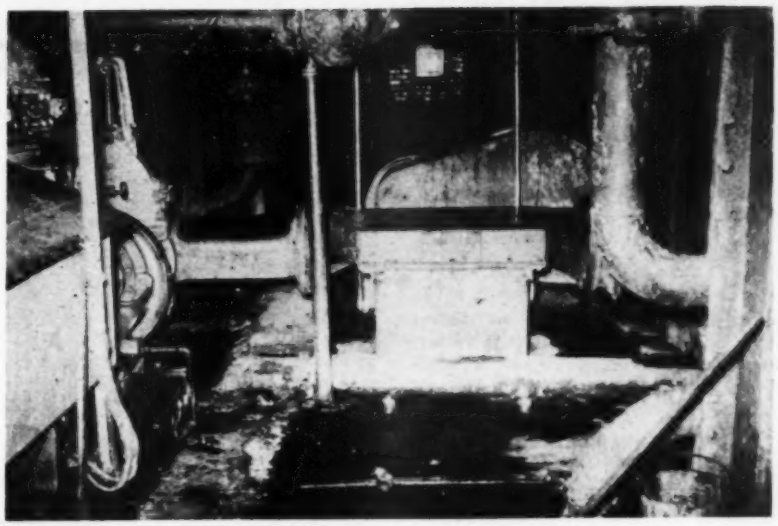
According to preference, magnets may be installed successfully in many places throughout your stock flow system. As a rule, if a magnet box is not used, the magnets are installed in such a manner that they are aided by a natural settling action.

One southern paper company has a rather unique separation system. It employs two parallel magnets with the stock passing over them vertically. They have simply flared out the pipe to the width of the face of the magnet. This installation provides for cleanout and by-pass. The area in contact with the field of attraction is constructed of stainless steel. Another company is employing a single magnet in the face horizontal position with the stock passing through a flared stainless steel pipe over the magnet.

Where only one magnet is used, the pipe in the flared out section should not exceed a depth of 4¼ inches. The flow over the magnet should be restricted to 200 fpm.

In addition to designing and using the magnet box we described in our operation, the Bathhurst Power and Paper Company, Ltd., is employing rectangular magnets over a chute conveying chips.

Faced with the universal problem, another company plans to install a head drum magnetic pulley on the chip belt and two rectangular magnets on stock lines. Two other mills expect to employ a magnetic head pulley and a rectangular suspended magnet, respectively, to cope with their problems of chip belt tramp iron separation.



Magnetic separator installation at a southern mill

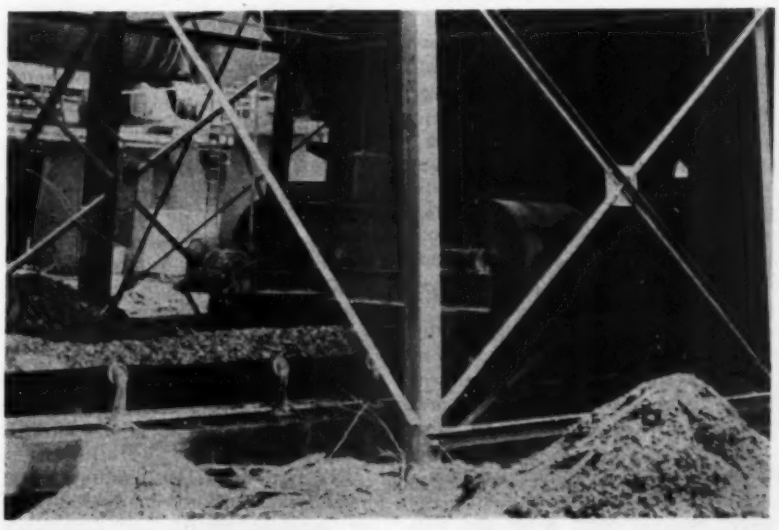
Magnets have been installed all throughout various systems. They have been employed at the inlets and outlets of stock chests and nonpressure consistency regulators. They have been installed in the bottom of vacuum cylinder washer vats. These have been of the plate type in some installations, but for the most part of rectangular construction.

Varied degrees of effectiveness have been achieved by utilizing magnets on save-all vats and nonpressure stuff boxes leading to the fan pumps.

It is well to note that magnets are used in wastepaper and rag mills. However, these mills are often not fully equipped. Bales of waste materials contain large quantities of tramp iron that are thrown into the system. It is often advisable to put each bale on a magnetic detector before it is even pulped.

It is probably impractical to use a magnetic detector on pulpwood conveyors. To reject logs as indicated containing tramp iron might entail routing many more logs to the reject pile than to the chippers. Though tramp iron damages chipper knives, it is far more practical to separate in chip and pulp form.

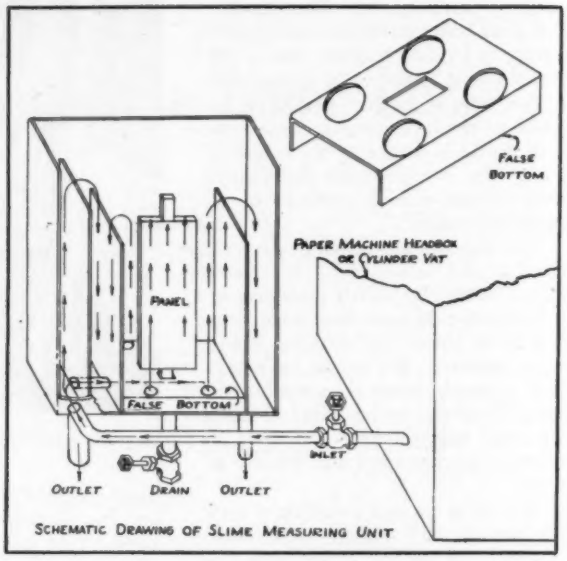
Tramp iron is picked up all along the stock flow; thus, it is advantageous to install magnets directly ahead of the machinery you desire especially to protect.



Self-cleaning magnetic separator over chip belt

Evaluation and Control of Slime Losses

Staff of
Buckman Laboratories, Inc.



SCHEMATIC DRAWING OF SLIME MEASURING UNIT

▶▶▶ AN ECONOMICALLY sound slime control program for any particular paper mill must bear the proper relationship to the total loss caused by slime. This loss is composed of a number of individual items of which the following are the more important:

1—Lost production time

a) Wash-ups and squirt-ups not required by order changes.

b) Wire cleaning, removal of spots, etc.

c) Felt washing

d) Felt repairs and felt changes to the degree that deterioration by microorganisms requires the repair and change of felts during normal production time.

e) Breaks, removal of paper from dryers, and removal of paper from calender stacks for those breaks caused by slime.

f) Miscellaneous items resulting from slime, such as cleaning slime from machine screens, removing and cleaning suction boxes, trouble with sticky stock, cleaning presses and press doctor, difficulty getting paper off wires, etc.

2—Decreased equipment performance

a) Decreased speed of operation of machines resulting from frequent breaks and/or loss of efficiency of wires and cylinder molds blinded by slime and felts plugged with slime and slime-bound fine fiber and filler particles.

b) Increased steam required to dry paper received from wires and felts operated at decreased efficiencies.

3—Loss of heat, chemicals, filler, fiber and water

a) Loss of heat, chemicals, filler, and fiber in white water discharged to sewer.

b) Increased use of fresh water to replace white water discharged to sewer to reduce the difficulties caused by slime.

4—Decreased life of clothing and equipment

a) Decreased wet felt life resulting from deterioration by microorganisms.

b) Decreased wire, cylinder mold and other equipment life resulting from the excessive use of corrosive toxicants, such as chlorine and copper sulphate.

c) Corrosion of metal equipment resulting from the production of hydrogen sulphide by sulphate-reducing microorganisms particularly under the stimulation of carbon dioxide from decomposing organic matter.

5—Loss of finished product

a) Loss of profit, cost of segregating and cost of repulping paper culled because of slime spots, slime holes, etc., and reutilized at the original grade.

b) Additional loss in grade or complete loss of that portion of the total culled paper which cannot be reprocessed at the original grade.

c) Loss involved in the settlement of customer claims resulting from defects caused by slime in the finished product.

d) Loss in weight resulting from overdrying paper to obtain uniformity of moisture content and compliance with customer specifications.

For paper mills in general, the total loss caused by slime varies considerably from mill to mill, different machine systems in the same mill, different furnishes in the same machine system, and different times of the year. The total loss resulting from the individual components noted usually will be between $1.00 and $5.00 per ton of paper when slime is not controlled. There are some other losses that result from slime which are not included in the foregoing because of the difficulty of evaluating them. However, considerations, such as a decreased general customer acceptance of finished products containing defects caused by slime, are significant and become more tangible when supply approaches or exceeds demand.

Slime Control Report Form

Sufficient data are available in most mills to permit a reasonably complete evaluation even though adequate basic records usually are not maintained so that an evaluation can be made of all the individual losses resulting from slime. Based on co-operative studies with a number of paper mills, a form was developed to assist in the assembly of data. Using the form, data are assembled by paper machines and by grade and basis weight of the paper manufactured. When practical, a separate report should be maintained for each grade and basis weight produced on each machine. For machines where grade changes are frequent, it may be desirable and adequate to assemble the data for only one or two grades produced most often or produced for periods of several days duration. Where

the grade and basis weight are typically changed several times during each 24-hour period, it is best to segregate the data into groups of several basis weights which are similar.

It is desirable to record characteristics of the furnish and the paper machine system that usually do not vary to a significant extent from day to day for a particular weight and grade of paper. This information is important in determining the amount of toxicant to employ and the place and frequency of additions. Moreover, some of the information noted is very important in determining the magnitude of certain losses frequently influenced by the growth of microorganisms and not evaluated on a daily basis, such as the amount of heat, chemicals, filler and fiber lost in the white water discharged to the sewer and the reduction in felt life. It is well to review the characteristics of the system and the furnish each time a new report is started. Changes that materially affect the growth of microorganisms and the costs resulting therefrom can be made without becoming generally known or their significance being fully realized.

The form provides for assembling data on the characteristics that normally vary from day to day. Space is provided so that data can be recorded for four weekly periods on each form. Following are comments and suggestions about recording the information covered by the different headings on the form:

1) Date—Dates should be recorded to establish the chronological sequence and to provide this information for use in subgrouping if the data are to be analyzed statistically.

2) Net production in tons per 24 hours—This figure is the most important figure in the mill. It reflects the over-all result of all conditions. Slime is only one of the conditions which affect it. After fixed costs have been met, such as labor, amortization of plant, and administration, each additional ton of production adds more to net operating income than the average profit per ton. A round figure of sufficient accuracy can be provided for the evaluation without revealing detailed cost data.

3) Operating efficiency in percent—The operating efficiency should be computed on the basis normally used by the particular mill. It is by definition a measure of paper mill efficiency and the formula usually contains provision for eliminating from consideration conditions that could not be prevented in the paper mill, such as a power failure. Operating efficiency as a measure of the effect of slime is primarily an overall figure for lost production time and production lost at the reel as the result of splices and rejected paper.

4) Lost time in minutes—Two subdivisions and the total are recorded. The lost time that could have partially resulted from slime is recorded first. In contrast, those lost time items which definitely are not influenced by slime are recorded separately.

5) Speed—The average machine speed is recorded. Machine speed affects net production but the result usually is not shown by operating efficiency or lost time figures. Machine speed is frequently reduced when breaks caused by slime become numerous and the growth of microorganisms may influence machine speed by reducing wire drainage and particularly felt absorption. Microorganisms distributed over pulp fibers may change the surface characteristics sufficiently to influence both drainage and formation. When slime is influencing water removal at the wires and felts and the paper machine is being operated at drying capacity, slime control will enable increased machine speed and result in greater production with a lower cost per ton. If the machine is being operated at maximum mechanical speed, a saving still can be obtained because less steam will be required per ton to dry the sheet.

6) Freeness—The average freeness and the range, which is the difference between the largest and smallest determinations each day, are recorded. Designate the freeness test used. A measure of freeness is included to determine if changes in freeness rather than changes in the amount of slime were affecting water removal at the wet end. If the Shewhart control chart method of analysis is employed, the number of tests making up the daily average should be recorded.

7) Average of suction box vacuums—Show whether the unit of measurement is millimeters or inches of mercury.

8) Suction couch vacuum — The average daily vacuum is recorded.

9) Steam consumption—Steam consumption is usually recorded as tons of steam per ton of paper or pounds of steam per ton of paper. Outstanding slime control frequently will result in an appreciable saving in the amount of steam required per ton of paper. Dryer steam is usually the amount recorded. However, when warm white water is diverted to the sewer to help control slime and steam is used to heat the system to obtain better wire drainage or in an attempt to control slime, the total steam should be included.

10) Paper properties—Both average and range of moisture are recorded. Uniformity of moisture is the advantage usually obtained when more uniform conditions affecting water removal at the wet-end are maintained. Good slime control should contribute to the production of a more uniform product from the standpoint of a number of paper characteristics.

11) Rejected paper and broke—This figure is usually obtained from actual weighing of broke and culled paper or from a broke meter. In addition to paper culled because of spots, dirt, etc., directly associated with slime, each break and shutdown contributes to the amount of broke that must be reprocessed. Reducing the amount of broke saves the cost of reprocessing.

12) Grams of slime per 1000 sq cm per 24 hours—The amount of slime collected on the wooden panel of the slime measuring unit is recorded.

The data on amount of slime accreting in the system provide information for use in making comparisons of the effect of slime on operating and quality characteristics. Benefits of slime control, of course, would be obtained regardless of measurement of the amount of slime accreting. Knowledge of the amount, however, is essential if an estimate of the degree of slime control is to be based on facts rather than opinions. Based on the observations which have been made, data obtained with a unit of this type indicate the amount of trouble and loss caused by slime in pulp and paper mill systems more reliably than indirect methods such as bacterial colony counts.

13) Amount of Slime Control Agent Used—This record is provided so that the amount expended can be compared with the value of the benefits obtained.

Graphical Presentation of Data

It is recommended that certain of the more important data assembled on the slime control report be presented to mill management in chart form. The data is plotted as the horizontal axis of the chart. The results recorded daily for the following factors then usually are plotted on separate scales for each factor in the order named from the top to the bottom of the chart:

1) Net production
2) Operating efficiency
3) Lost time partially from slime
4) Speed
5) Steam consumption
6) Moisture
7) Other paper property
8) Amount of rejected paper and broke
9) Grams of slime per 100 sq cm per 24 hours

10) Amount of slime control chemicals used

The daily values are not connected, but at the end of each week, a weekly average is computed from the daily data and plotted on the chart at the midweek date position. The progressive weekly averages obtained in this manner then are connected with straight lines to show the general trend from week to week.

Charts prepared in the manner outlined provide a clear concise picture of a number of related factors of interest to operating supervisors and those responsible for technical mill control. The distribution of the daily results above and below the weekly average provides a record of the variation obtained. Visual examination of the chart thus will indicate whether the changes observed in weekly averages are greater or less than those which occur as the result of chance alone.

A supplementary graphical analysis which sometimes is helpful in characterizing the effect of slime can be made by grouping data by days since the last thorough cleanup. When paper machine systems are cleaned during a week-end shutdown, it is comparatively simple to group data by days of the week and average each variable for all of the Mondays, all of the Tuesdays, etc., during the period studied. The same general procedure can be followed in analyzing data for days after a thorough cleanup which was not conducted on a week end. In either case, a graph is prepared with the number of days since the last thorough cleanup on the horizontal axis and the other variables studies on the vertical axis. In this manner, it is possible to see the average trend during the interval between thorough cleanups.

Shewhart Control Chart

All of the data assembled on the slime control report are useful in preventing the losses caused by slime and evaluating a slime control program. One of the difficulties experienced in analyzing data assembled in process industries is to decide if variation is the result of chance alone or from significant changes in operating conditions and testing techniques. Statistical methods which require only a knowledge of arithmetic have been developed and are of assistance when supported by familiarity with conditions and proper judgment. The Shewhart control chart for variables is one method suggested (*1*). The principles of procedure, a glossary of terms, and the necessary tables are given. A more detailed discussion of particular interest to process engineers is presented in a recent book by E. L. Grant (*2*).

It should be pointed out that the Shewhart control chart method is usually employed to determine when assignable causes are or are not influencing the measured quality characteristics so that action about process controls should or should not be taken. The control chart method has many useful applications in the interpretation of the large amount of data collected but usually not adequately analyzed.

As an aid in the evaluation of a slime control program, one is primarily interested in the Shewhart control chart method for determining the average and the normal variation during periods of one to three months so that sound and justified decisions can be reached as to whether a change did occur, and if so, can a cause, such as better or poorer slime control, be assigned. A large part of the uncertainty about the value of slime control can be eliminated when it is recognized that it is unsound to make decisions on the effectiveness of a slime control program based on occasional microbiological surveys or occasional visual observations. Decisions should not be based on the analysis of less than ten subgroups of data assembled using the slime control report, and twenty-five subgroups are preferred. Indications can be obtained based on the analysis of seven or eight subgroups, but the data should be analyzed again when more subgroups are available. In general, conditions of outstanding slime control should be established first and sufficient data then collected to provide a minimum of ten subgroups. Analysis of these data with the establishment of control limits provides a base for comparison. Previous results then can be compared with the control period and the magnitude of the difference determined. Subsequent periods also can be compared with the control period to evaluate the magnitude of seasonal changes, and to determine the amount and method of treatment with BSM-11 that yields the largest net saving.

Slime Control

The growth of microorganisms creates many significant problems in the pulp and paper industry. BSM-11, Butrol, and Bufen 30 were developed for use by pulp and paper mills as part of good housekeeping practice in the solution of these problems. The chemical composition of these products is as follows:

BSM-11: phenylmercuric acetate, 10 per cent; potassium2,4,6trichlorophenate, 50 per cent; suitable solvents, 40 per cent.

Butrol: phenylmercuric acetate, 10 per cent; potassium orthophenylphenate, 50 per cent; suitable solvents, 10 per cent.

Bufen 30: phenylmercuric acetate, 30 per cent; suitable solvents, 70 per cent.

Pulp and paper mill equipment is not corroded by the use of these compositions at the concentrations recommended and under the conditions normally encountered in mill systems.

On the subject of using Butrol or Bufen 30 in systems during the manufacture of stock which will be converted into food containers, it should be particularly noted that both products disperse readily in water and remain in solution at the concentrations employed for slime control throughout the range in *p*H encountered in pulp and paper mill systems. This eliminates the possibility of undissolved organomercurials attaching themselves to individual lots of pulp in substantial quantities. It should be also mentioned in this regard, that organomercurials are sometimes confused with inorganic mercurials, and organomercurials with a low molecular weight organic radical are sometimes regarded in the same manner as phenylmercuric compounds.

In addition, phenylmercuric compounds are employed in a wide number of preparations for humans. For example, phenylmercuric borate is used in the preservation of blood plasma at a concentration of 1:50,000 of blood plasma (20 ppm). Phenylmercuric benzoate has been used in camouflage face paints at a concentration of 1 part per 25,000 parts of face paint (40 ppm). Phenylmercuric compounds are used at 1:1,000 in ointments for skin infections (1,000 ppm). Some ointments for application to burns contain phenylmercuric nitrate at 1:20,000 (50 ppm). "Prothricin" nose drops contain phenylmercuric acetate at 1:50,000 as a preservative (20 ppm). "Thantis" lozenges contain an organomercurial in sufficient quantity so that one grain (0.0648 gram) of the compound would be introduced into the body per day under the use permitted.

In contrast, paper is frequently coated before food contacts it and, when it is not, the food still does not absorb all of the organomercurials present in the paper. It thus can be conservatively stated that a person would not obtain amounts of mercury from the use of either Butrol or Bufen 30 in paper or paperboard mills which would exceed the amounts from the other uses of organomercurials mentioned. Examples such as these, are a few of the many which could be cited and are supplemented by the following additional information of interest reported by Gibbs, Shank, and Pond (*3*):

"Analysis of foods, the details to be published elsewhere, shows that they practically all contain mercury, varying in amounts from a trace to 5 to 6 micrograms per hundred grams. Fresh vegetables and eggs and one specimen of crackers contained no mercury. From this and other data we conclude that since all persons are continually ingesting a small quantity of the element in their food and also continually excreting it in the urine and feces, the presence of small amounts in both food or excretions has no toxicologic significance. Moreover, Stock, Bodnar, Odon and Weszpremy and we have found mercury always present in all human tissues examined. Moreover, we add to the list the tissues of dog, cat, rabbit, frog, cow, hog and fish, including newborn offspring of both animals and human beings and also fetuses of animals. Bodnar, Odon and Weszpremy even suggested a biologic role for mercury."

Handling and Shipping

The three products are liquids which are easily fed into the systems directly from the drums in which they are received by the use of suitable feeding equipment. Irritating dust and odor thus are eliminated in the handling of these products. They are packed in 100-lb steel drums with standard 2-inch and ¾-inch bungs. The drums of Butrol and Bufen 30 have the area between the chimes painted white to provide ease of differentiation from the drums of BSM-11 which have their entire sides painted black.

These products do not present problems different from those involved in the handling of many chemicals in common use at the present time. Workers handling these products should observe the precaution of wearing rubber gloves and goggles. If they accidentally get any one of these products on their skin, the precaution followed is to wash promptly and thoroughly with cool water and soap. Blistering of the skin will result from prolonged contact with these liquids.

Effectiveness

The synergistic combination of chemical compounds in BSM-11 and Butrol provides control of the different types of organisms encountered in the microflora of paper mill systems, with a significant net saving per ton of paper or paperboard above the cost of the toxicant in practically all mills. BSM-11 is recommended in preference to Butrol or Bufen 30 for general slime control in pulp and paper machine systems except during the manufacture of stock which will be converted into certain types of food containers. This compound also is recommended for all other applications in which a very slight odor of chlorinated phenols is not objectionable. The conditions under which odor may be retained by paper and paperboard from the use of chlorinated phenols for slime control are not well understood. However, odors have been reported in some cases when paper and paperboard were used for the manufacture of tightly closed food containers and the odor apparently may not develop until the stock has been aged for several months. Consequently, until more is known about the problem, Butrol or Bufen 30 is recommended for use in paper machine systems while manufacturing paper and paperboard for food containers.

Applications

BSM-11 was developed to meet the needs of pulp and paper mills for a microorganism control product which would combine the advantages of the organomercurials with those of the chlorinated phenols for the economical control of the many different types of slime forming organisms. Butrol was recently developed to provide similar advantages for the control of microoragnisms without the danger of imparting undesirable taste or odor to the paper or paperboard. The use of individual chemical compounds of various kinds has frequently resulted in a selective reduction of the microorganisms comprising a portion of the microflora. When biological balances are altered in this way, the remaining types of microorganisms usually grow more rapidly. In other words, microorganisms compete with one another in their environment and, when one competing group is greatly reduced in number, it is a quite general result that the remaining group or groups develop at a faster rate. This is particularly true when the chemical used is reasonably selective in action and does not effectively control the remaining groups of organisms. It seems that a number of observations at pulp and paper mills which have been regarded as acclimatization actually represent a selective reduction of certain types of organisms followed by a more rapid growth of the remaining types. There is no evidence of acclimatization of slime forming organisms in pulp and paper systems to the combination of chemical compounds provided in BSM-11 and Butrol. If, and when, acclimatization is encountered under any particular set of conditions, the acclimated organisms can be controlled by temporarily increasing the amount of BSM-11 or Butrol used for about one week. The amount used then can be reduced to normal and treatment continued with the combination without encountering the increased growth of various organisms resulting from changing back and forth from one chemical toxicant to another.

For slime control in pulp and paper mills, these compounds are employed at 0.2 to 0.8 lb per ton of moisture-free pulp or paper or at 5 to 25 ppm during the period of treatment based on the total weight of water and fiber at maximum dilution. As noted in the foregoing, Butrol or Bufen 30 is recommended for slime control during the production of pulp, paper and paperboard for use in food containers. The toxicant usually is added to the system during 2 to 3 hours once each 8-hour shift, or once each 24 hours and these frequencies of addition normally give the most satisfactory results for general slime control. When adequate slime control has not been attained previously and the system contains a significant amount of slime, it also is particularly important as the first step in laying the foundation for efficient slime control to clean the system thoroughly using BSM-11 or Butrol in a detergent solution (*4*).

The ranges suggested in the foregoing for slime control cover the normal variation in slime control problems encountered. For an average slime control problem, the mid-point of the range is recommended for initial use while for a severe slime condition the upper limit of the range should be employed until the system is essentially free of slime. The subsequent usage then can be reduced by increments of 0.1 lb. per ton per two week period. During the reduction, the operating data and the rates of slime accretion found with the Slime Measuring Unit (*5, 6*) should be followed very closely to determine the point at which there is the first evidence of increased losses from slime. The treatment then should be increased sufficiently to provide a reasonable safety factor to insure the desired degree of slime control throughout at least most of the range of conditions encountered in the particular system. The principle followed should be one of treatment to the point of diminishing returns. In other words, the ideal amount of treatment to use is that which will provide the maximum net saving above the cost of the toxicant employed.

Other uses of these products include the following: (1) Preservation of wet pulp lap and sheet stock; (2) preservation of slush stock held in process and also coated broke; (3) felt preservation and washing; (4) preservation of coating and sizing materials; (5) production of mold resistant paper and paperboard.

The primary field of specialization by Buckman Laboratories, Inc. is that

of slime control in pulp and paper mills. The chemical compounds manufactured for slime control are selected on the basis of providing maximum effectiveness per unit cost. The major portion of the efforts of the entire personnel is directed toward assisting the pulp and paper industry to obtain the maximum net saving from microorganism control.

Technical Service

A staff of experienced technical service field representatives is available to assist mill groups in organizing, starting and evaluating slime control programs. In most cases these men spend their full time working on problems related to microorganism control in the pulp and paper industry.

In addition to the services of the technical service staff at the mills, the facilities of the microbiological and chemical laboratories are available without charge to the pulp and paper industry for work on any problem related to microorganism control.

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Chemicals for Slime Control

A. G. GILLASPIE

The Hamilton Laboratories, Inc.

▶▶▶ CERTAIN CHEMICAL properties are characteristic of all organic mercury compounds that car be used for control of slime. All of them may be called mild oxidizing agents since under certain conditions they are sensitive to reducing compounds. This does not mean that they cannot be used in the presence of sugars, etc., at white water temperatures, but it does mean that aluminum or zinc will react with their solutions. It is possible to demonstrate a reaction between fourdrinier wire and phenylmercuric acetate solution in the laboratory by maintaining uniform concentration.

However, the rapidly changing concentration of organomercurial that obtains from adding this toxicant in customary doses to a mill white water system does not cause any corrosion or embrittling of fourdrinier wire that can be detected. The high concentration of mercurial that is added once each eight hours, or less frequently, drops below the chemically active point in one hour in the average system. If, on the other hand, it were desirable or necessary to maintain a high concentration of phenylmercuric ion constantly, its action on the wire would constitute a definite objection to the product.

The trade name Merfenelopes, when used without qualification, indicates a product packaged from purified phenylmercuric acetate that has been treated with a wetting agent and ballmilled to promote more rapid solution. Merfenelopes (Industrial Grade), as the name implies, are packaged from unpurified phenylmercuric acetate. The active ingredients in Merfenelopes BS are equal weights of phenylmercuric acetate and the sodium salt of a substituted phenylmercuric compound. Merfenelope P has as its active ingredient 40 per cent of a powdered sodium salt of a substituted phenylmercuric. An aqueous solution containing 15 per cent of the same organomercurial is designated as Merfenelopes PS.

The new and most versatile member of the series is designated Merfenelopes WS. This product has been developed with the problems of the large, fast mill in mind. While beater action or other agitation is necessary to get phenylmercuric acetate into solution, Merfenelopes WS is so readily soluble that it may be added at any point in the system where a solution will be effective. It is an organomercurial composition resulting from a newly-developed synthesis.

It is interesting to note that Merfenelopes WS will not react with fourdrinier wire at an appreciable rate even on boiling at 1 percent concentration. Solutions of 100 ppm of Merfenelopes Ws and of phenylmercuric acetate have been allowed to stand at room temperature in contact with fourdrinier wire and observed for one week. The former solution remains colorless while the latter develops a bluish-green tint indicative of dissolved copper during the first 24 hours. The wire becomes embrittled as the color in the phenylmercuric acetate solution increases, but the wire in the Merfenelopes WS solution retains its original strength.

Phenylmercuric compounds are more or less rapidly inactivated by mercaptans or thiophenols. It has been found experimentally that Merfenelopes BS is more resistant to this type of inactivation than a straight phenylmercuric acetate product. The former is, therefore, recommended for unbleached sulphate operations.

The organomercurial in Merfenelopes WS is more readily decomposed by mercaptans or sulphides than phenylmercuric acetate but is less reactive toward metals in laboratory tests. While in concentrations above 1:20,000 phenylmercuric acetate is precipitated by chloride ion, the halides do not precipitate Merfenelopes WS. From a practical standpoint this is not always a limitation on phenylmercuric acetate since the phenylmercuric ion concentration at incipient precipitation is much higher than is ever used in slime control. There are conditions, however, under which phenylmercuric acetate, whether added as a powder or as a solution, may be converted to the chloride before the final dilution is attained.

All oragnic mercury compounds as well as most other compounds that will kill bacteria and fungi are toxic to human beings and carry the appropriate warning and antidote. Merfenelopes are packaged in doubly crimped envelopes so that the operator is not exposed to the irritating powder. Merfenelopes PS solution should be

handled with caution that is observed with liquid caustic. Plenty of water should be used to remove any of the solution that is spilled on the skin. Neutralization with a weak acid is not worth while because such an acid will not inactivate the organomercurial that is present.

When taken orally by rabbits the M.L.D. for phenylmercuric salts that is reported by Birkhaug (*J. Infect. Dis.* 53, 250, 1933) is 32 mg. per kg. of body weight. This is not particularly alarming when it is appreciated that an application of five parts of phenylmercuric acetate per million to a white water system containing pulp at 0.75 percent consistency and assuming 100 percent adsorption, which is abnormal, would reqiure 1500 grams of dry pulp to contain one gram of the organomercurial. For a person weighing 150 lb., the gram of toxicant would be less than half the minimum lethal dose for oral consumption as calculated from the experiments using rabbits. Assuming a mechanism whereby the organomercurial could be transferred from a paper container to food, an extremely large quantity would have to be consumed in order to pick up a dangerous amount of mercury. It should be borne in mind also that for packaging liquids, like milk, paper stock has to be waxed, and the organomercurial is substantially insoluble in the wax, so there could be no appreciable transfer. Consequently, the hazard is more theoretical than real, even though strict interpretation of existing laws may not permit one to recommend the use of these products in food containers.

Merfenelopes in powdered form are white or light cream colored and substantially odorless. Merfenelopes PS is straw colored and posseses a faint odor which is insufficient to be transferred to the paper because of the relatively small amount used.

Handling and Shipping

The Merfenelopes that are powdered materials are normally packaged in one or two ounce envelopes. These envelopes are crimped both at bottom and top and are packaged in cartons of 50 (or 25). Either four or twenty of these cartons make up a standard shipping container.

The solution is shipped in light gauge nonreturnable 55-gallon steel drums that have one plug for standard ¾-inch pipe fittings. Smaller drums are provided if requested by the customer.

General Effectiveness

The bacteriological properties of phenylmercuric acetate are well known. Test solutions of Merfenelopes WS are comparable to the same strength of phenylmurcuric acetate. Laboratory work indicates that these compounds head the list in effectiveness in controlling slime producing organisms when chemically reactive halogens are excluded. There are mills, however, in which results obtained are less satisfactory than laboratory tests would indicate. The reason for this is a combination of chemical and physical factors that did not obtain in the laboratory, and they can be overcome to a large extent. Thus the phenomenon of absorption by unbleached pulp can be met to a degree by increasing the number of points for simultaneous addition of the toxicant. The use of Merfenelopes BS for unbleached sulphate affords increased chemical stability toward the residual by-products of the pulping operation.

Merfenelopes WS is so easily dissolved that it may be added at any point in the white water system, thus affording the flexibility of a solution with the convenience of a powder. Its bacteriological effectiveness as determined in the laboratory is comparable to that of phenylmercuric acetate. The mill trails conducted to date indicate that the two products are of equal effectiveness.

Application

There is no uniform rule for controlling slime with organomercurials. However, with proper adjustment of time and points of addition, the amount required will vary from a ratio of one ounce to three tons for unbleached chemical or mechanical pulps to something like one ounce for every ten tons in the case of highly bleached stock. Best results are obtained in most cases by using larger doses at intervals of eight to twelve hours rather than a continuous treatment or addition every two to four hours. For unbleached stock every convenient point of addition should be utilized. With the solution or with the highly soluble Merfenelopes WS, this is easily accomplished. By tearing the envelope, the latter may be added with assurance of full utilization at any point where a solution could be used.

Technical Service

This laboratory, together with that of the R. T. Vanderbilt Co., will gladly work with pulp and paper mills on slime problems. The mill operator is the one who has to decide whether the toxicant he is using is preventing slime breaks. He is also the one who has to determine which breaks are caused by slime. It is to our advantage to increase the efficiency of our products where they are being used, and we welcome opportunities to discuss problems with technical staffs in the industry. We have for a number of years successfully built our business on the tested and proved effectiveness of phenylmercuric acetate as a slime control agent.

Chemicals in Steel*

▶▶▶ Steel is basic; as steel goes so goes industry. Steel production in our country was 6,000 tons in 1847, a century later it was 84,000,000 tons and it is still going up. Increase in tonnage should not be the only criterion of development in steel; consideration must be given to the contributions of pure and applied research, and to the improvements in processing.

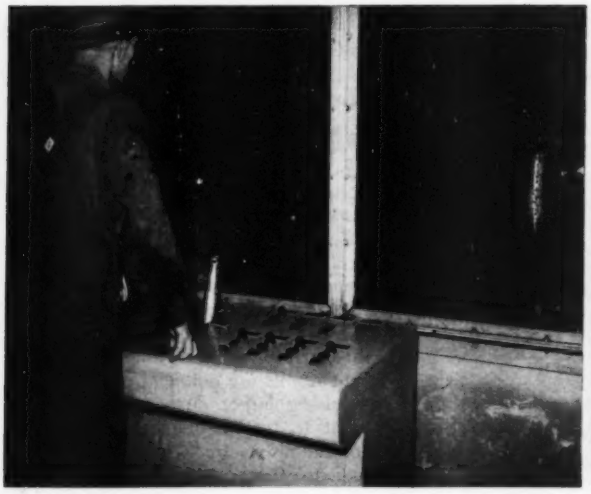
Everything in steel making is on a gigantic scale. The ore, coke, limestone and air required for its manufacture are procured in prodigious quantities. Blast furnaces, Besemer converters and open hearths required for its production are man-made infernos which devour the raw materials and emit vast volumes of hot gases, streams of melted metal at white heat and pools of liquid slag.

Heat, weight, size and pressure reach extremes in steel making. Despite these herculean proportions a precision to within a few hundredths of one per cent must be attained in the control of some of steel's ingredients. A small percentage of carbon is essential to steel, and for special characteristics, manganese, chromium, molybdenum, etc. are added. Usually sulphur and phosphorus are objectionable and are not allowed above a few thousandths of a per cent. Nitrogen is an interesting ingredient and the usual open hearth steel contains from 0.002% to 0.004%. To obtain special properties it may be raised to 0.008%-0.015% by chemical additions to the molten metal. Nitrogen stiffens thin sheet steel used in tin plate so that beer cans retain their shape better under pressure. Heavy sheet steel used for culverts has greater corrosion resistance, and nitrogen improves machinability in alloy steels.

The problem arose of how best to add nitrogen to steel. After an extensive investigation of nitrogen chemicals, a special grade of calcium cyanamide was selected for both economy and performance. It has an ideal decomposition temperature, it adds no objectionable materials and it is quite safe to use. The properties are about the same as adding a pinch of salt to a kettle of soup, but the scale is different; about 700 pounds are added to a 250 ton ladle of molten steel.

Steel is basic but, like the seasoning in the soup, special chemicals are vital to the best performance of steel.

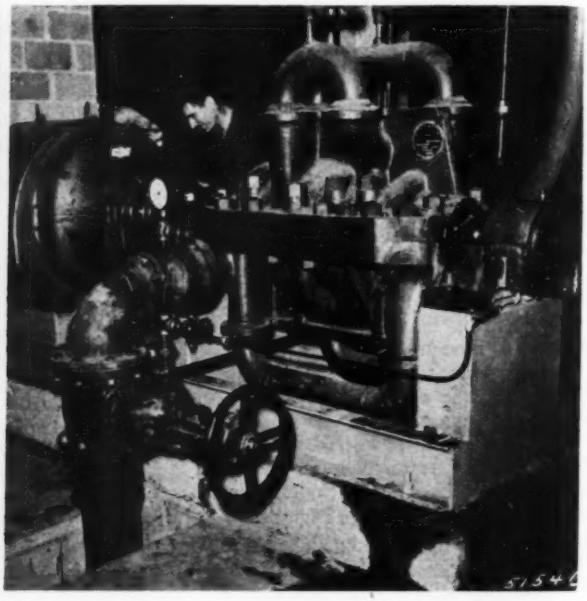
(*) From "For Instance," published by American Cyanamid Company.



Push button panel in glass enclosed cubicle permits finger tip control with full visibility

Log rotates while high pressure water jet travels from end to end removing bark

Barker unloaded, ready for another log—will handle logs up to 20 ft long and 60-in dia.



Six-stage pump driven by 500-hp motor delivers 500 gpm at 1,200 psi to the traveling jet

Spaulding Installs New Hydraulic Barker

▶▶▶ NOW IN SERVICE at the Spaulding Pulp and Paper Company, Newberg, Oregon, is a new hydraulic barker that will handle logs from 4 to 60 inches diameter and 8 to 22 feet long at the average rate of 14,000 board feet per hour.

Logs are transferred from the log deck to the barker by loading arms actuated by an air cylinder. Ten pairs of 42-inch diameter notched steel wheels rotate the log while bark is removed by the impact of water from a high pressure jet that travels the length of the log. Heart of the unit is the 6-stage Worthington centrifugal pump (500 gpm at 1200 psi) driven by a 500-hp Electric Machinery Mfg. Company squirrel-cage induction motor.

The log roll mechanism has a 4 speed, a-c motor drive and the jet carriage is driven by a variable speed d-c motor, receiving current from an M.G. set.

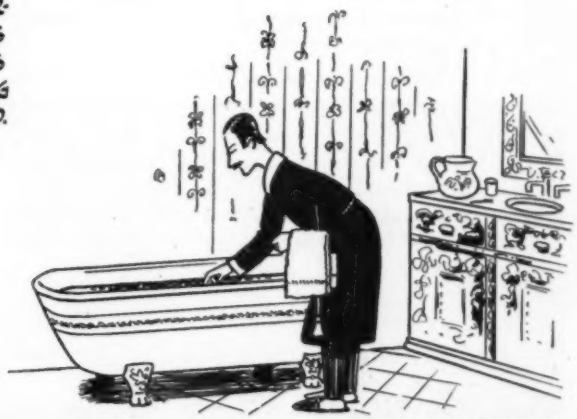
All operations are controlled electrically from a panel within a glass enclosed cubicle. The control system, as well as the drive motors for the log roll unit and jet carriage, were made by Westinghouse. Both loading and unloading arms are operated by power cylinders activated by solenoid valves operated from the control panel.

While the entire unit was desinged by Worthington Pump & Machinery Corporation, loading, log turning and unloading mechanism were built under subcontract by the Lamb-Grays Harbor Company, Hoquaim, Washington.

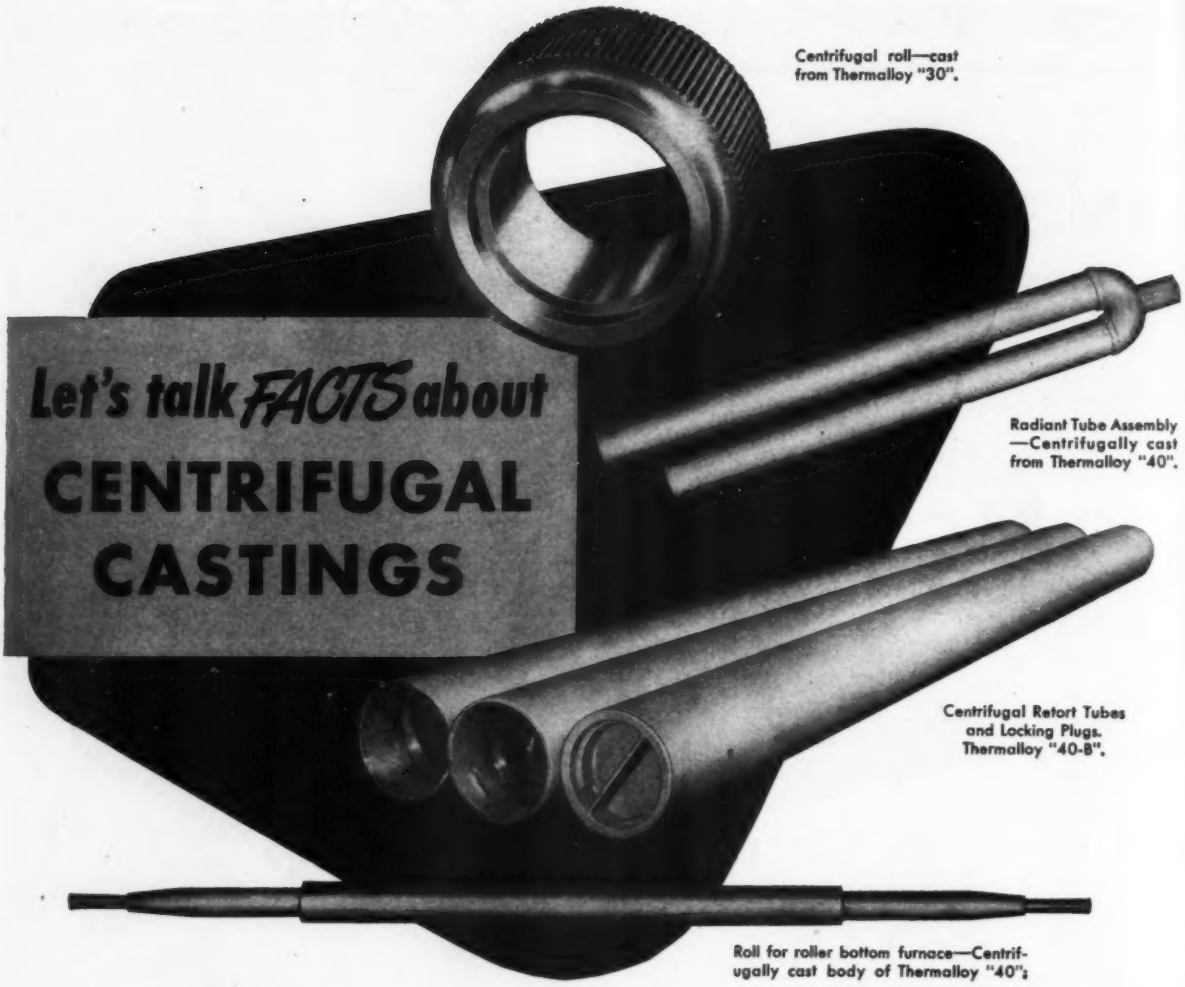
PAPER SKETCHES

Rittenhouse, COLONIAL AMERICA'S FIRST PAPERMAKER, CHARGED BRADFORD, PRINTER, TEN SHILLINGS A REAM FOR PRINTING PAPER, AND TWENTY SHILLINGS A REAM FOR WRITING PAPER, BECAUSE THE WRITING PAPER WAS SIZED AND THE PRINTING PAPER UNSIZED.

So Anxious WERE MID-19th CENTURY AMERICAN ENGRAVERS TO OBTAIN INDIA PAPER FOR THEIR PROOFING, THEY TORE OUT—AND USED—THE INDIA PAPER LININGS FROM IMPORTED CHINESE SEA CHESTS.



BATHTUBS MADE OF PRESSED PAPER WERE STILL IN SERVICE EARLY THIS CENTURY. ONE, 40 YEARS OLD, RECENTLY WAS REMOVED FROM A HOUSE IN BERKELEY, CALIFORNIA


Centrifugal roll—cast from Thermalloy "30".
Radiant Tube Assembly —Centrifugally cast from Thermalloy "40".
Centrifugal Retort Tubes and Locking Plugs. Thermalloy "40-B".
Roll for roller bottom furnace—Centrifugally cast body of Thermalloy "40".

Let's talk *FACTS* about CENTRIFUGAL CASTINGS

We make both centrifugal castings and static castings. We don't make a blanket claim that centrifugal castings are denser, more uniform or stronger. In certain cases, this has proved to be true. But for all practical purposes, the differences in physical properties are almost negligible.

Thinner wall sections can be produced more economically by centrifugal casting than by static casting.

The amount and location of machining must be considered. Centrifugal casting produces a smoother outside surface than static casting. However, shrinkage areas are usually found on the inside surface, making it necessary to provide more machining stock if a finished surface is required.

In some cases, costs may be lower for centrifugal castings than for static castings—but this depends entirely upon the individual casting to be produced.

We recommend that you let our experienced metallurgists work with you in selecting the most economical type of casting for your application. You may be sure of a practical and unbiased recommendation. Call your nearest Electro-Alloys engineer, or write Electro-Alloys Division, 2025 Taylor Street, Elyria.

Specify CHEMALLOY* for corrosion resistance
THERMALLOY* for heat and abrasion resistance

*Reg. U. S. Pat. Off.

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ELECTRO-ALLOYS DIVISION
ELYRIA, OHIO

NSC 37th Annual Congress

▶▶▶ THE GREAT TASK in safety is persuading the human being to like safety. At the opening session of the 37th Annual Congress of the National Safety Council, held in Chicago, October 24, this thought was voiced by K. Frances Scott, M.D., president of the National Federation of Business and professional Women's Clubs.

At the same session, the Council's president, Ned H. Dearborn, outlined what he feels constitutes a complete course in safety. From his subject, "Safety in Six Easy Lessons," Mr. Dearborn presented the following formula for the six lessons:

1—"Be Careful—the Life You Save May Be Your Own." This slogan has been so widely distributed for the past three years, it approaches the Biblical Golden Rule.

2—Be practical—don't be criminally negligent; and don't try to show off.

3—Be positive—feel a personal responsibility for the safety of others.

4—Be sensible—Use common sense to save dollars and cents. Nearly all top executives in big corporations have learned that safety pays big dividends.

5—Be co-operative. Don't double cross your green cross—support it.

6—Be a good American! Safety, is always a moral obligation, though it may not always be a legal requirement.

The inspirational thoughts kindled at the opening session of the Congress, spread to the 25 industrial sections which met during the five-day Congress in the Stevens, Congress, Blackstone, Morrison, Palmer House and Sherman Hotels.

The total death toll from accidents in 1948 was 98,000—an average of one every five minutes and 23 seconds. Nonfatal accidents are estimated at more than 10 million, or an average of one every three seconds. The economic loss is estimated at seven billion 400 million dollars, or approximately $50 per person. That is $234 per second, or $13,000 per minute, or $782,000 per hour, or $20,200,000 per day.

Pulp and Paper Section

▶▶▶ CULMINATING THE YEAR that rounded out a quarter-century of contests among its members, the meetings of the Pulp and Paper Section were accented by a special spirit of achievement. From the data presented in the various reports, it had been 25 years of safety progress.

When the Fourteenth Annual Safety Congress was held in Cleveland, 25 years ago, the contest system that now has become an integral part of most of the National Safety Council's industrial sections had its beginning.

At that meeting, the first award given for one of these contests was made by Edward B. Fritz, publisher of *The Paper Industry* magazine. The contest lasted for one month, and among the 41 mills which participated, the best record was held by Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin. Presentation of the trophy (a silver cup) was made by A. Scott Dowd, then editor of *The Paper Industry,* and was received by F. H. Rosebush, in charge of safety at the Nekoosa-Edwards mill.

When this award was made at the luncheon of the Pulp and Paper Section, a resolution was passed challenging any other section of the National Safety Council to plan a contest for the determination of the safest section.

The following contest within the Pulp and Paper Section lasted for eight months, and these contests have been held regularly since that time.

During the quarter of a century that has elapsed, the development of the present scientific system of accident control and safety education has benefited from the wisdom and experience of many leaders who have worked diligently for the recognition and perpetuation of safe practices.

In his report to the Section at the opening meeting, R. W. Croucher, general chairman, pointed out that although the Section's list of key members had dropped from 315 to 273 during the past year, this reduction fully reflects the progress of the National Safety Council. The transfer of 42 key members to the newly-organized Printing and Publishing Section is in line with the expansion and progress of the Council. The Section, however, has gained 38 new administrative units during the past year, and a special campaign is now being programmed to interest new key members in the work.

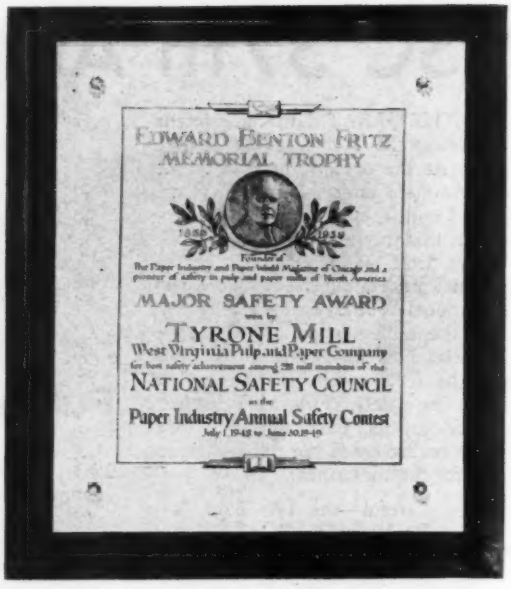
Chairman Croucher told the Section that a speakers bureau has been proposed for the purpose of furnishing safety speakers for meetings and con-

R. W. Croucher, Pulp and Paper Section's presiding chairman

D. J. Hardenbrook, vice pres. Union Bag & Paper Corp., gave keynote address at opening of Pulp and Paper Section

George W. Harper, newly-elected chairman of the Section

Presentation of Grand Prize was made by Mrs. Fritz to Robert K. Meredith, safety director of West Virginia Pulp & Paper Co., Tyrone, Pa., at the luncheon meeting



Edward Benton Fritz Memorial Trophy is awarded annually by Fritz Publications, Inc., as the grand prize in the Paper Industry Safety Contest

ventions of trade association and other organizations desiring such services. Several have volunteered for this work.

Awards Announced at Luncheon Meeting

The Section Luncheon, held on Thursday, climaxed the contest-anniversary theme. On this occasion each year the mill that has topped each group in its record is awarded the National Safety Council Trophy. Those mills which place second and third are given certificates.

Presiding at the luncheon was George W. Harper, newly-elected chairman of the Section. (*See list of officers for coming year at close of this story.*) Mr. Harper, formerly director of safety, The Mead Corporation, is now Associate Professor of Safety Engineering at the University of Illinois.

Missing from the ceremonies this year was that familiar and friendly personality of J. E. Long, past president of the National Safety Council, who, for a number of years, has officiated at the presentation of the Council's awards. In Mr. Long's absence, Chairman Croucher made all of the presentations. (*A list of the group winners appears on a succeeding page.*)

A plaque had been prepared honor-

WINNERS OF NSC Trophies (First Place)—Left to Right: FIRST ROW—Clifford Williams, Kimberly-Clark Corp., Appleton, Wis.; M.C.M. Pollard, National Gypsum Co., Newburgh, N.Y.; George T. Marsh, Pillsbury Mills, Wellsburg, W. Va.; Robert K. Meredith, West Virginia Pulp & Paper Co., Tyrone, Pa.; George E. Flory, Certain-teed Products Corp., York, Pa.; Peter F. McIntosh, Canadian Cellucotton Products Co., Ltd., Niagara Falls, Ont., Can.; C. H. Kemp, Thilmany Pulp & Paper Co., Kaukauna, Wis. . . . SECOND ROW—George Clossay, Jr., Marinette Paper Co., So. Glens Falls, N.Y.; John Linskens, Kimberly-Clark Corp., Appleton, Wis.; O. F. Grieve, Certain-teed Products Corp., Buffalo, N.Y.; H. H. Nienaber, Certain-teed Products Corp., Richmond, Calif.; Ambrose Rutter and Arthur J. Hombletle, Kimberly-Clark Corp., Neenah, Wis.; Ernest Dutcher, The Flintkote Co., Los Angeles, Calif.; Stanford H. Collins, Container Corp. of America, Carthage, Ind.; Amos S. Keen, Armstrong Cork Co., Pensacola, Fla.; Andrew T. McDermott, The Mead Corp., North Leominster, Mass.; Wm. H. McLaughlin, Lily-Tulip Cup Corp., College Point, N.Y.; J. A. Long, Bay West Paper Co., Green Bay, Wis.; Harley B. Goodrich, Strathmore Paper Co., West Springfield, Mass.

ing Mr. Long for his many years of helpfulness to the Section and for his term of service in making these presentations.

Preliminary to presenting the awards, Chairman Croucher led into his introduction of A. Scott Dowd, chairman of the Contest Committee with an interlude that was not on the program and was unknown to Mr. Dowd.

Mr. Croucher sketched the quarter-century history of the Section's contests and reminded those present that the present Contest Committee chairman has been actively connected with that work during the entire 25 years. He said that the National Safety Council had taken recognition of this term of service and that he had been commissioned to present to Mr. Dowd the Council's Award of Merit—a service plaque, the highest honor bestowed by that body. Only two such awards were made at the 37th Congress.

The Chairman followed the plaque presentation with a special gift to Mr. Dowd as a token of appreciation for his work from the Section's Officers and Executive Committee. This award—a handsome desk set with all accessories—bore an appropriate inscription.

Grand Prize Presented by Mrs. Fritz

After expressing his appreciation for the acknowledgment of his efforts, and thanking the Section profoundly for its gift, Mr. Dowd read his report of the 1948-1949 Paper Industry Safety Contest which closed June 30. This report also revealed the name of the winner of the major award—the Edward Benton Fritz Memorial Trophy. In closing his report (which will be found on a following page), Mr. Dowd introduced Mrs. Edward Benton Fritz, vice president and treasurer of Fritz Publications, Inc., who customarily presents this award each year.

Mrs. Fritz related briefly the history of the award, now a memorial to her late husband, and acquainted some of the Section's newer delegates and members with the story of his devotion to the cause of safety, as well as his early ambitions to become a publisher. The award, which has become the grand prize in the contests, originally was established by him as the Paper Industry Trophy. It was awarded annually by him until 1939, since which time it has been known as the Edward Benton Fritz Memorial Trophy.

At the close of her remarks, Mrs. Fritz asked the representative of the Tyrone Mill of the West Virginia Pulp and Paper Company to come forward and receive the Trophy.

Robert K. Meredith, safety director of the West Virginia company, received the Trophy from Mrs. Fritz

Chairman R. W. Croucher presents A. Scott Dowd with NSC Award of Merit—also gift from Section's Executive Committee—for 25 years of service

Group of certificate winners: L. J. Louy, Container Corp. of America, Cleveland & Medford, Mass.; A. E. Topmiller, Champion, Hamilton, Ohio; J. N. Conaway, Scott Paper Co.; Chester, Pa.; and Harley Goodrich for Old Colony Envelope Co., Westfield, Mass.

Four safety executives addressed the Section on the afternoon of the first day. L. to R.: Edward G. Holtzman, E. A. Page, Julius Draper, and O. J. Sherman

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commenting that he had long looked forward to the time when his company would be the recipient of the grand prize.

Winners in 1948-1949 Paper Industry Safety Contest

▶▶▶ Of the 317 participants in the Paper Industry Safety Contest, group trophies were won by 24. Certificates for 2nd and 3rd rank went to 9 contestants. In the following list, trophy winners are numbered (1). Nos. (2) and (3) signify certificate awards:

Division I—Pulp and Paper Mills

Group A

(1) Kimberly-Clark Corp. (Lakeview Mill), Neenah, Wis.
(2) Hollingsworth & Whitney Co. (Algonquin & Taconnet Mills), Waterville, Me.
(3) Champion Paper & Fibre Co., Hamilton, Ohio

Group B

(1) West Virginia Pulp & Paper Co., Tyrone, Pa.
(2) Howard Smith Paper Mills, Ltd., Beauharnois, Quebec, Can.
(3) Ste. Anne Paper Co., Ltd., Beaupre, Quebec, Can.

Group C

(1) Certain-teed Products Corp., York, Pa.
(1) Spaulding Fibre Co., Inc., North Rochester, N. H.
(3) Price Bros. & Co., Ltd., Jonquiere, Quebec, Can.

Group D

(1) Container Corp. of America, Carthage, Ind.
(1) Mead Corp. (Wheelwright Div.), North Leominster, Mass.
(1) Armstrong Cork Co., Pensacola, Fla.
(1) Hollingsworth & Whitney Co., Madison, Me.
(1) Marathon Corp., Ashland, Wis.
(1) Certain-teed Products Corp., Richmond, Calif.
(1) Strathmore Paper Co. (Mill No. 1), Woronoco, Mass.
(1) Fort Wayne Corrugated Paper Co., Vincennes, Ind.
(1) American Writing Paper Corp. (Albion Div.), Holyoke, Mass.
(1) National Gypsum Co., Newburgh, N. Y.

Division II—Paper and Board Remanufacturing

Group A

(1) Lily Tulip Cup Corp., College Pt., N. Y.
(2) Scott Paper Co., Chester, Pa.
(3) Container Corp. of America, Medford, Mass.

Group B

(1) Canadian Cellucotton Products Co., Ltd., Niagara Falls, Ontario; Can.
(2) Old Colony Envelope Co., Westfield, Mass.
(3) Container Corp of America, Cleveland, Ohio

These men headed the Round Table for Paper Products Group. L to R: W. H. McLaughlin, who presided; G. J. Bienvenu, who replaced John W. Meinhardt as Conference Leader; and C. H. Kemp, Expert

Group C

(1) Marinette Paper Co., S. Glens Falls, N. Y.
(1) Kimberly-Clark Corp., Appleton, Wis.
(1) Pillsbury Mills, Inc., Wellsburg, W. Va.
(1) Thilmany Pulp & Paper Co. (Bag Mill), Kaukauna, Wis.
(1) Certain-teed Products, Buffalo, N. Y.
(1) ABC Corrugated Box Co., Minneapolis, Minn.
(1) Flintkote Co. (Paper Box Plant), Hollywood, Calif.
(1) Bay West Paper Co., Green Bay, Wis.

Papers and Round Table Discussions Feature Business Sessions

Each of the the Section's four afternoon business sessions drew a large attendance. The audience-interest was complemented by the high quality of the addresses prepared previous to the meeting, and by the generous participation in the round table meetings.

The theme of safety education ran through all of the addresses, and the program of the Section was keynoted by the

Mills that Have Won the Major Trophy in The Paper Industry Safety Contest

Twenty-five years ago the first Major Trophy given in the contest among mill members of the Paper and Pulp Section of the National Safety Council was awarded by *The Paper Industry* magazine to the Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin. This contest lasted but one month. The succeeding contest ran for eight months; thereafter for six months until 1932 when the contests were extended to a full year. Since 1932, the awards have been given for a twelve-month record.

In 1939, *The Paper Industry* Major Trophy became the Edward Benton Fritz Memorial Trophy, awarded by Fritz Publications, Inc., publisher of THE PAPER INDUSTRY AND PAPER WORLD.

The twenty-five major trophies awarded since 1925 have been won by the following mills:

1925	Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin
1926	Kimberly-Clark Corporation, Neenah, Wisconsin
1927	International Paper Company, Riley, Maine
1928	St. Croix Paper Company, Woodland, Maine
1929	Kimberly-Clark Corporation, Niagara Falls, New York
1930	The Crystal Tissue Company, Middletown, Ohio
1931	The Champion Coated Paper Company, Hamilton, Ohio
1932	Cornell Wood Products Company, Cornell, Wisconsin
1933	St. Croix Paper Company, Woodland, Maine
1934	St. Croix Paper Company, Woodland, Maine
1935	St. Croix Paper Company, Woodland, Maine
1936	Hollingsworth & Whitney Company, Waterville, Maine
1937	Bird & Son, Inc., Philipsdale, Rhode Island
1938	Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec
1939	Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec
1940	Strathmore Paper Company, Woronoco, Massachusetts
1941	The Mead Corporation, Nashville, Tennessee
1942	U. S. Gypsum Company, North Kansas City, Missouri
1943	The Flintkote Company (Pioneer Div.) Los Angeles
1944	The Flintkote Company (Pioneer Div.) Los Angeles
1945	Marathon Corporation, Ashland, Wisconsin
1946	Kimberly-Clark Corporation, Niagara, Wisconsin
1947	Strathmore Paper Company, Woronoco, Massachusetts
1948	Container Corporation of America, Carthage, Indiana
1949	West Virginia Pulp and Paper Company, Tyrone, Pennsylvania

Sulphite Pulp Manufacturing Round Table discussion drew a large attendance. J. A. Draper presided; E. V. Johnson was Conference Expert; and Douglas B. Chant (standing) was Conference Leader

Another popular Round Table meeting was one on Sulphate Pulp. Presiding here was E. B. Lambton. Conference Expert was D. E. Henry; Conference Leader was D. V. Hill.

forceful opening address at the first session on the subject "The Safety of American Freedom Is Everybody's Job." The speaker, D. J. Hardenbrook (vice pres. Union Bag & Paper Corp., New York City), brought out quite convincingly that safety is a part of our American citizenship. He drew a picture of old world tyranny in contrast to the American system of freedom and economic liberty.

Four addresses given at the second afternoon session were packed with safety facts, illustrated with slides, and augmented by short sessions. The subjects covered were: "Finding the Accident Facts," (E. A. Page, Kimberly-Clark Corp.); "Visual Education in the Mills," (J. A. Draper, Consolidated Paper Corp., Ltd.); "Unusual Accidents in Paper Mills" (O. J. Sherman, Gaylord Container Corp.); and "Specific Safety Techniques (Edward G. Holtzman, Wagner Electric Corp.).

Separate round table sessions were held on two afternoons. Three scheduled for Wednesday afternoon were:

1) Pulpwood Logging—E. A. Minor, presiding; W. C. Harrison, conference expert; R. O. Helberg, conference leader.

2) Sulphite Pulp Manufacturing—J. A. Draper, presiding; E. V. Johnson, conference expert; Douglas B. Chant, conference leader.

3) Sulphate Pulp Manufacturing—E. B. Lambton, presiding; D. E. Henry, conference expert; D. V. Hill, conference leader.

On Thursday, the two sessions were:

1) Paper Manufacturing—D. V. Hill, presiding; A. E. Topmiller, conference expert; Arthur Carle, conference leader.

2) Paper Products—W. H. McLaughlin, presiding; C. H. Kemp, conference expert; John W. Meinhardt, conference leader.

These sessions were informal and the remarks unprepared. Typical of the questions presented, and the answers given is the following summary of two of these sessions:

Sulphite Pulp Manufacturing

Q—What equipment is used to lower maintenance men and others into digesters to make inspections and minor repairs?

A—Hemp rope ladders may be used with life belt and rope . . . Fellow worker stands at top of digester to observe and raise man if necessary . . . Cable ladder used with portable 1-ton budget hoist and boatswain chair . . . Wooden steps used in rope ladder . . . Metal folding ladder used.

Q—Are men permitted to go into chip bins to muck down ledges, etc.? What equipment is used?

A—Man can go in, but *must* wear life belt with rope attached; his partner must be at top of bin to keep watch. Accidents described: Man fell into chip bin, but was stopped by a grating at an L turn before reaching horizontal digesters; came out all right. An unusual accident happened in a digester room—a crane is used to lift the heavy covers. There is a 1½-inch nut in the bottom of the lifting hook which has a cotter pin in it. Cotter pin had sheared off and this in turn permitted lid weighing about 1,000 lb. to drop. It struck an employee's foot. A new design has been drawn to eliminate this hazard.

Q—What device is used for blocking blow pit doors?

A—Drop bars are used to keep door shut. Recommended that wedge blocks should not be used while door is shut since they may fly out and permit door to become loose . . . complete example given of how the hot and dry conditions in a digester building can cause wood scaffolding to weaken and give way. Recommended that no temporary scaffolding be allowed to remain in the digester building.

Sulphate Pulp Manufacturing

Q—What is done with the accident-prone worker who is continually going to first aid?

A—One plant interviews each employee upon his return to work after a lost-time injury . . . Another sends out a postcard to each employee each year showing his accident ratio in comparison with the rate of his department . . . If the employee's own observation does not help, he is interviewed by the supervisor, safety man or safety committeeman in his department. Tact must be used so that employees will not fail to report all minor injuries to first aid.

Q—How do employees unload lime without receiving lime burns?

A—Mechanical conveyors are used in some mills; these eliminate exposure to employees. . . . Employees handling lime are required to cover the exposed area of the body with vaseline or other protective creams. New workers are required to wash off lime with a 5% solution of acetic acid.

Q—How do you get employees to wear protective equipment?

A—All protective equipment with the exception of safety shoes is furnished by the company. Employees are urged to wear it by some and required to wear it by others. Discipline is used to enforce rule where wearing of safety equipment is required.

Q—How do you prevent wood hook injuries?

A—Most mills require the wearing of safety shoes, shin guards, and uniform hooks. New workers are trained by old experienced men. The foreman or lead man inspects all wood hooks and protective equipment for each shift.

Pulp and Paper Section's New Executive Committee

The following new officers and committees were elected to serve for the year 1949-1950:

Officers

General Chairman—George W. Harper, associate professor of Safety Engineering, University of Illinois, Urbana, Ill.

Vice Chairman and Membership Committee Chairman—C. L. R. Dougherty, assistant manager, Industrial Relations, Union Bag and Paper Corp., Savannah, Ga.

Secretary & Program Chairman—H. B. Goodrich, maintenance and safety engineer, Strathmore Paper Co., West Springfield, Mass.

News Letter Editor—A. E. Minor, safety supervisor, The Ontario-Minnesota Pulp and Paper Co., Ltd., Kenora, Ontario, Can.

Statistician—Fred W. Braun, vice-president & chief engineer, Employers' Mutual Insurance Co., Wausau, Wis.

Regional Membership Representatives: East—H. P. Heubner, insurance manager,

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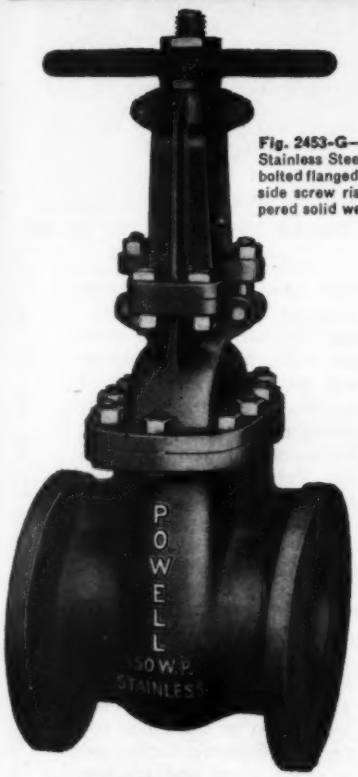


Fig. 2453-G—Large 150-pound Stainless Steel Gate Valve with bolted flanged yoke bonnet, outside screw rising stem and tapered solid wedge.

For more than twenty-five years Powell has been specializing in valves for the Process Industries. Whenever a new process has been installed, Powell has been ready with the right valves to meet all of its requirements.

Today the Powell Line for the Process Industries is so *complete** that there are Powell Valves specifically designed to meet the requirements of each and every flow control service in *your* industry. And if you install the *right* valves to meet individual service conditions, you can be assured of maximum performance. *To be sure* you have the right valves, consult Powell Engineers.

THESE ARE A FEW OF THE MANY POWELL VALVES YOU WILL SEE AT OUR

BOOTH 54

22nd Exposition of Chemical Industries
Grand Central Palace, New York City
November 28 to December 3

Fig. 1944 — Large 150-pound Stainless Steel "Y" Valve with flanged ends, bolted flanged yoke-bonnet and outside screw rising stem.

Fig. 1832—200-pound Stainless Steel Gate Valve with screwed ends, screwed-in bonnet and inside screw rising stem.

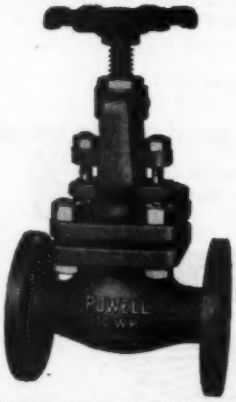


Fig. 1969—150-pound Stainless Steel Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke-bonnet and tapered solid wedge.

*The Complete Powell Line includes Globe, Angle, Gate, Check, Relief and Flush Bottom Tank Valves in Bronze, Iron, Steel and a wide range of Corrosion-Resisting metals and alloys.

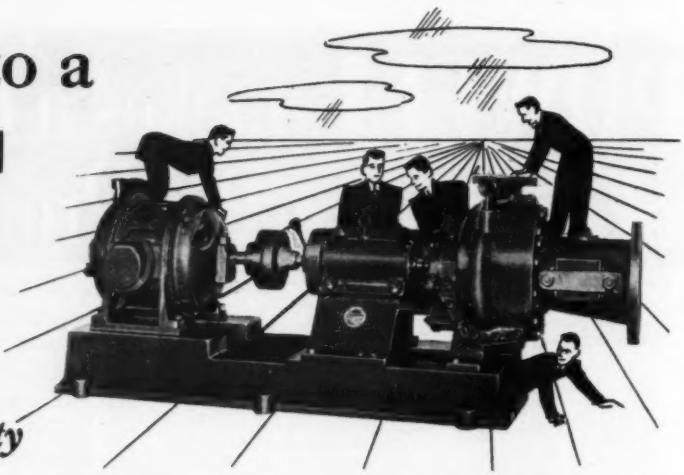
Fig. 2433—150-pound Stainless Steel Swing Check Valve with flanged ends and bolted flanged cap.

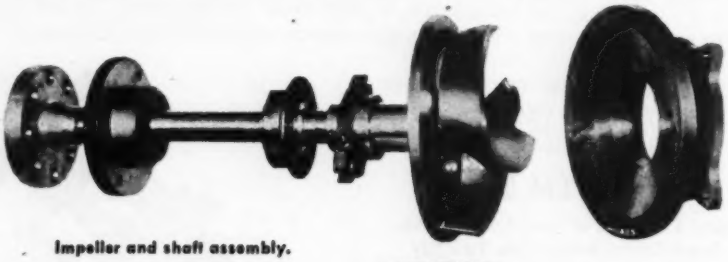
The Wm. Powell Company
Cincinnati 22, Ohio
DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

Let's look into a WORTHINGTON PAPER STOCK PUMP

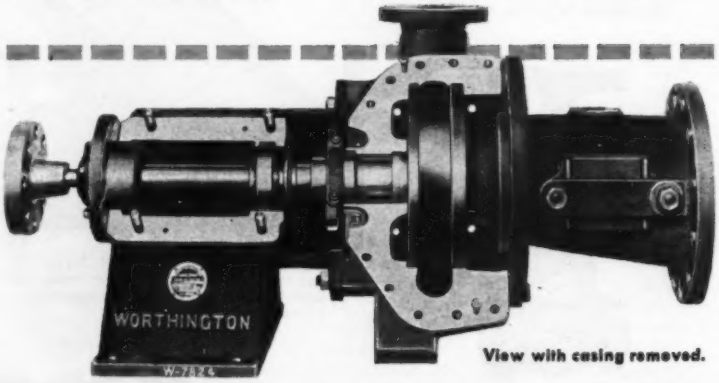
and see what makes it unequalled for dependability





Impeller and shaft assembly.

Fully open impeller prevents clogging. Impeller vanes extend into suction to get stock into pump. Easily replaceable side plates on *both* sides of impeller prevent damage to casing and maintain pumping efficiency. Rugged shaft resists deflection. Extra heavy bearings assure long life.



View with casing removed.

Diagonally split casing for easier servicing, without breaking suction or discharge connections. Eccentric suction cone is extra large size for handling dense stocks.

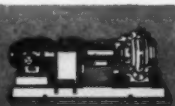
Experience That Stands Alone

Ruggedly built and expertly designed, the paper stock pump illustrated is just one of Worthington's broad range of paper-processing pumps. For maximum dependability and efficiency in *every* pumping application, remember: there is no substitute for Worthington's more than a century of top-ranking experience in the field of hydraulics. Get proof of the *more worth in Worthington*. Call our nearest District Office, or write to *Worthington Pump and Machinery Corporation, Centrifugal Pump Division, Harrison, N. J.*

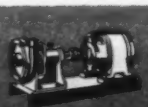
WORTHINGTON

C9-S

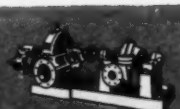
THE WORLD'S BROADEST LINE ASSURES YOU THE RIGHT PUMP FOR EVERY JOB



CENTRIFUGAL STOCK PUMPS Type FP. Handle all kinds of stock up to 7% consistency. 4 sizes. Capacities up to 4000 GPM; heads up to 200 ft.; speeds up to 1198 RPM.



GENERAL PURPOSE PUMPS Type CF. Open impeller. Single stage. Sizes 1" to 4". Capacities up to 1000 GPM; heads up to 130 ft.; speeds up to 2475 RPM.



BOILER FEED PUMPS Type UB-2. 7 sizes. Capacities up to 1500 GPM; heads up to 1000 ft.; speeds up to 3600 RPM.

Pulpwood Logging Round Table was presided over by A. E. Minor; Conference Expert was W. C. Harrison. Acting as Conference Leader was R. O. Helberg

At the Paper Manufacturing Round Table discussion, D. V. Hill presided. A. E. Topmiller was Conference Expert, with Arthur Carle as Conference Leader

The Flintkote Co., New York, N.Y.; South —George Merriman, co-ordinator of personnel, International Paper Company, Mobile, Ala.; Great Lakes—E. A. Page, personnel superintendent, Kimberly-Clark Corp., Neenah, Wis.; West—Ernest Dutcher, safety engineer, Pioneer Division, The Flintkote Co., Los Angeles, Calif.; Canada —Douglas B. Chant, secretary engineer, The Ontario Pulp & Paper Makers Safety Association, Toronto, Ont., Canada.

Committees

Medical Advisory Committee—Dr. James D. Stark (Chairman), medical director, Hammermill Paper Co., Erie, Pa; Miss Ellen A. Phelan, R.N., Rhinelander Paper Co., Rhinelander, Wis.

Contest Committee — A. Scott Dowd (Chairman), president, Fritz Publications, Inc., Chicago, Ill.; W. R. Cahill, personnel director, Nekoosa-Edwards Paper Co., Port Edwards, Wis.; J. Fred Berry, personnel manager, Alton Box Board Co., Alton, Ill.

Pulpwood Logging Division

Fred T. Morrish (Division Chairman), safety supervisor, The Ontario-Minnesota Pulp & Paper Co., Ltd., Fort Frances, Ontario, Can.

Publications Committee—B. H. Roy (Chairman), supervisor of safety, Woodlands Dept., Spruce Falls Power & Paper Co., Ltd., Kapuskasing, Ontario; Seth Jackson, safety officer, U.S. Forest Service, Washington, D.C.; Arthur F. Minchin, indus. safety director, Dept. of Labor & Industry, State of Maine, Augusta, Maine.; Leland Hooker, Timber Technologist, Forest Prods. Research Div., Michigan College of Mining & Technology, Houghton, Mich.

Visual Aids Committee—D. E. Henry (Chairman), safety co-ordinator, Southern Advance Bag and Paper Co., Hodge, La.; Harry Jefferson, training officer, American Pulpwood Ass'n, New York City; J. C. Rodgerson, safety engineer, Brown Co., Berlin, N.H.

Pulp Manufacturing Division

Julius A. Draper (Division Chairman), director of safety, Consolidated Paper Corp., Ltd., Grandmere, P.Q., Canada.

Publications Committee — D. V. Hill (Chairman), safety director, The Mead Corp., Kingsport, Tenn.; A. S. Cook, manager, Quebec Pulp & Paper Safety Association, 65 St. Anne Street, Quebec, P.Q., Canada; Cyril D. McCan, assistant safety engineer, Crossett Paper Mills, Crossett, Ark.; R. Chapman, mill accident prevention committee, Howard Smith Paper Mills, Ltd., Cornwall, Ont., Can.

Visual Aids Committee — Howard J. Kroll (Chairman), safety chairman, Blandin Paper Co., Grand Rapids, Minn.; George S. Nelson, claims & safety manager, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.; R. Gilmore, general safety supervisor, Rayonier, Inc., Hoquiam, Wash.; John J. Long, safety director, Virginia Pulp & Paper Co., Luke, Md.

Paper Manufacturing Division

Arthur Carle (Division Chairman), safety director, The Northwest Paper Co., Cloquet, Minn.

Publications Committee—E. B. Lambton (Chairman), safety engineer, St. Regis Paper Co., New York City; C. C. Coughlin, safety director, Gulf States Paper Corp., Tuscaloosa, Ala.; A. V. Griffin, safety engineer, Morris Paper Mills, Morris, Ill.; Lambert Louy, safety director, Container Corp., Chicago.

Visual Aids Committee — George H. Pearce (Chairman), mill safety officer, Bathurst Power & Paper Co., Bathurst, New Brunswick, Can.; G. Russell Leonhard, director of safety, Paterson Parchment Paper Co., Bristol, Pa.; Frank V. Eisenhauer, safety engineer, Bird and Sons, Inc., East Walpole, Mass.; James N. Conaway, safety director, Scott Paper Co., Chester, Pa.

Paper Products Division

W. H. McLaughlin (Division Chairman), director of safety & sanitation, Lily-Tulip Cup Corp., Long Island, N.Y.

Publications Committee—W. D. McGuinness (Chairman), assistant insurance manager, The Flintkote Co., New York, N.Y.; G. J. Bienvenu, general superintendent, Gaylord Container Corp., Container Division, Bogalusa, La.; H. W. Greenwood, safety director, Union Bag and Paper Corp., Hudson Falls, N.Y.; Frederick Schulze, personnel & safety supervisor, The Ruberoid Co., Joliet, Ill.

Visual Aids Committee—John Meinhardt (Chairman), director of safety, Gaylord Container Corp., St. Louis, Mo.; A. J. Basile, safety director, The Lawrence Paper Co., Lawrence, Kans.; Hugh Jackson, safety engineer, Johns-Manville Co., New York City; Vincent P. Coulon, safety director, The Sealright Co., Fulton, N.Y.

Safety Contest Report By A. Scott Dowd

The 25th annual Paper Industry Safety Contest of the National Safety Council closed on June 30, 1949. It was the summit of our previous contests, both in registration and in man-hour exposure, and it attained the lowest average frequency rate of accidents in the history of our Section.

A total of 317 contestants—228 mills and 89 re-manufacturing plants—participated in the Contest. Of these, seven had not sent in their June reports when the bulletin was compiled, so they are not ranked with those who completed the Contest. The total number of man-hours reported was in excess of 380,000,000, during which time nearly 4,300 disabling injuries were reported.

The cumulative frequency rate of all contestants for the entire year was 11.27—a reduction of 21% from the cumulative rate of identical contestants in the previous year's Contest. There were 203 contestants with rates below the national average of mills reporting to the National Safety Council in 1948. Twenty-four plants (including three with below minimum exposure) completed the Contest with perfect scores.

There were 94 plants, aside from the group winners, that had frequency rates below their group averages and also showed reductions in rate by comparison with those made in the previous Contest. Certificates of Achievement will be awarded to each of these units, which are listed on pages 7 to 10 of the final bulletin.

The rank and frequency rate of each contestant appears in the final bulletin, which is in your hands. In accordance with

our adopted practice, you will find all contestants listed by their Code Numbers, except those that have the rank of 1, 2, and 3 in each group, and those that made special specific reductions of their frequency rates in the previous contest.

Observing that a number of the reduction records were remarkable achievements, the thought occurred that it would be helpful to know how accidents were reduced in a few of these cases, through vigilance and safe practices, and what means had been provided by Management to prevent them. Respecting the time which has been allotted for this report, I shall describe as briefly as possible some of the important factors in the few cases I have selected.

Case History "A"

Without thought of priority or preference, I refer to the record of *Donohue Bros. Ltd., La Malbaie, Quebec,* a contestant in Group C of Division 1. This company, which manufactures newsprint, reduced its frequency rate from 52.56 last year to 3.31 in the 1948-49 Contest. The mill made a continuous reduction in accident frequency from a high of 93.37 in the 1945-46 Contest. Three points have been carried out in their safety program:

(1) Every new employee is instructed in the company's safety policy. He is then given a test to make sure he understands the facts. This has given surprising results.

(2) As the seriousness of an injury depends largely on the injured person's physical condition, they have instituted a complete physical examination before hiring. Last year two employees suffering from tuberculosis lost over a month and a half for mere scratches which would have healed quickly on a healthy man.

(3) They believe the competitive spirit is vital to the success of their safety program. To stimulate this interest, boards are placed in every department and at the mill entrance. In the upper part of these, posters are changed weekly. The lower part exhibits a 12-step flight of stairs, representing twelve months of the year, while each department is symbolized by a wooden figure. The figures go up one step only when their respective departments have registered no lost-time accidents during the month.

Case History "B"

As a result of building step by step toward a better safety record the *Menominee Mill of Marathon Corporation, Menominee, Michigan* (Group C), reduced its frequency rate from 49.90 in the 1947-48 Contest to 9.08 this year. Continuous reduction has been made in their accident experience since 1946.

These steps have included a complete guarding program, equipping a first-aid department, and the training of first-aid men for all departments and on all shifts; safety training for all supervisors and foremen; hiring a full-time safety co-ordinator; revamping their safety committee set-up to include an employee's committee, a supervisor's committee, and a plant safety council chairmanned by the Plant Manager; hazard report forms initiated by the employee's committee; a fitting stock of safety shoes, and a goggle program.

A simple type of contest has been used in this mill to carry interest in their safety record into the homes of employees. It consists of the following:

On an electrically-lighted and operated flasher sign is posted the number of days safely worked and a slogan. The number changes daily and the slogan changes twice a week.

Each week, at an unspecified time, the safety co-ordinator and a member of the safety committee meet and draw clock numbers from a box. As drawn, the safety man phones the home of the man whose number was drawn. He asks for the wife or mother of the employee and asks her if she can tell him the number of days since their last lost-time accident, and what the slogan is now on the flasher board.

If she answers either question correctly, he congratulates her and sends her a note remarking on her husband's or son's interest in their safety program, and a crisp new dollar bill. If she misses, her husband's or son's name is listed on a brightly striped doghouse at the time clock.

Winners are posted also. He calls until he has obtained three winners. Salaried people are included and issued numbers.

The hazard reports and the above simple contest have done much toward increasing interest and efforts to eliminate injuries.

Case History "C"

The Manistique Pulp and Paper Company, Manistique, Michigan (Group D) is justifiably proud of its safety record, which covers a period of 18 months. This mill is a *Division of The Mead Corporation,* which directs the safety programs of all its plants.

Another of the *Mead mills,* the *Wheelwright Division at North Leominster, Mass.,* made a *perfect* score in Group D.

Mead's safety program is separated into four essential components: *Engineering, Training, Promotion,* and *Enforcement.*

Each item of safety falls into one of these components. Program elements are divorced from the safety procedure. The procedure used to carry on the program consists of supervisor safety committees, which follow line organization. Through this plan each supervisor has been made to feel a part of the management team, and thus he is responsible for the safety in his department or of his crew.

The second important item has been the use of the Employee's Sweepstake Contest, as a part of the promotional program. (This is described in Safety Practice Pamphlet No. 101.) No cash prizes are given, but merchandise such as fishing rods, reels, knives, flashlights, safety shoes, blankets, etc., are used as prizes. This contest has aroused the interest and co-operation of every employee.

The whole effect is to create in each person's mind a realization of the value and the importance of working safely.

A result of this program at the *Manistique Mill* is exhibited in its reduction of accident frequency from the rate of 28.23 in the 1947-48 Contest to that of 2.57 this year.

Case History "D"

The Belgo Division of Consolidated Paper Corporation Limited, Shawinigan Falls, Quebec, (Group A) had been experiencing some 25 to 35 lost-time accidents per year. After a talk with the company's Director of Safety, the Division Manager called a meeting of his Superintendents to discuss the problem, and after a time his paper mill superintendent came up with this scheme:

Every Monday or Tuesday the Superintendent calls in all his foremen and gives them a sheet of paper on which is typed "The Topic for the Week," together with important points on that topic; typical topics being "Handling Material," "Infection," "Fire Prevention," "Good Housekeeping," "Specific Operating Techniques," etc.

During the week each foreman is required to talk to everyone of his men—either singularly or in groups—on that topic. On Friday the foreman is required to turn in a report stating the number of men contacted, their reactions, and any good ideas that have been suggested by his men.

The Safety Inspector also prepares a topic, which is sent to each Superintendent, which he can use in place of his own, if desired. He keeps a file of these topics.

Since the above scheme went into effect in the paper mill *a year ago,* it has spread to all departments, and is now being introduced to all of the *Consolidated* mills.

Belgo's frequency rate in the 1947-48 contest was 12.65. It was reduced to 2.98 in the succeeding year.

Case History "E"

In the Re-manufacturing Division (Group C) the *Gaylord Container Corporation Plant at Atlanta, Georgia,* had frequent accidents from improper handling of floats, or skids, causing leg and foot injuries. Signs were then hung overhead in the aisles with such caution remarks as "Avoid Accidents—Lay Floats Flat." These and words of caution from the Safety Committees were successful in the prevention of such accidents. *Their over-all safety program during the past year* resulted in a reduction of 20.87 to 6.5 in the last Contest.

1949 Contest

As you know, our present Contest is in its tenth month. Following innumerable requests, the Industrial Conference of the National Safety Council agreed to put most of its Sectional Safety Contests on a calendar year basis, running from January 1 to December 31.

All participants in our 1948-49 Contest, which ended June 30, 1949, are already enrolled in the new Contest. The last six months of the 1948-49 Contest (January through June, 1949) became the first six months of the new Contest. 258 mills and 103 re-manufacturing plants—a total of 361, are now enrolled.

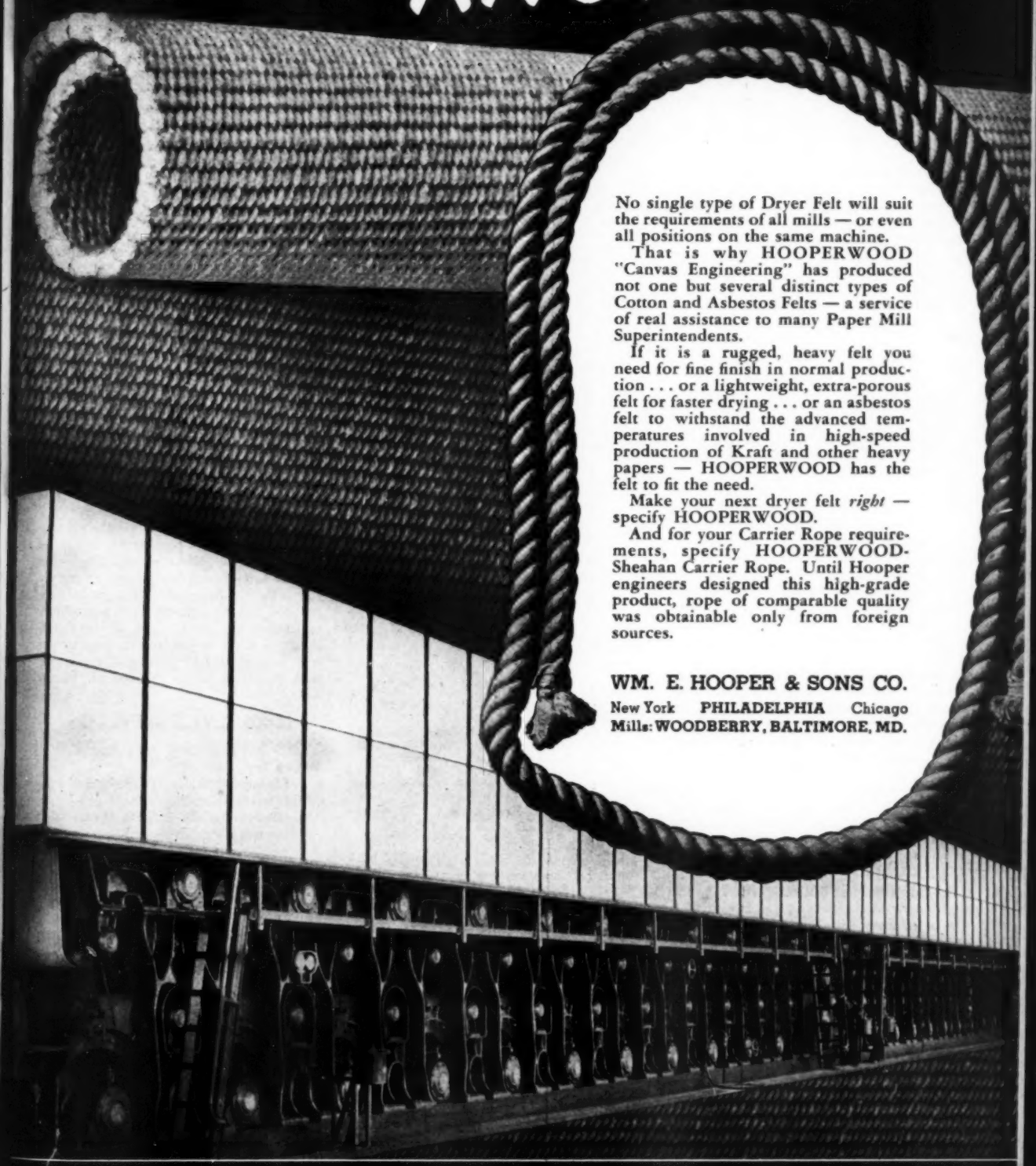
Group Winners and Major Awards In 1948-49 Contest

Perfect scores have increased from 12 in the 1947-48 Contest to 21 this year. The average of rates in first place, above zero, (in all groups) has dropped from 1.91 to 1.41. Reports from the group winners reveal how closely and how sincerely Management and employees in these plants are co-operating in their safety programs.

This greater number of perfect scores and reductions in frequency rates of group winners is enlarging the task of selecting a winner for the Edward Benton Fritz Memorial Trophy.

The winner of this trophy, which is donated by Fritz Publications, Chicago, publisher of THE PAPER INDUSTRY AND PAPER

WHAT EVERY PAPER MAKER KNOWS...



No single type of Dryer Felt will suit the requirements of all mills — or even all positions on the same machine.

That is why HOOPERWOOD "Canvas Engineering" has produced not one but several distinct types of Cotton and Asbestos Felts — a service of real assistance to many Paper Mill Superintendents.

If it is a rugged, heavy felt you need for fine finish in normal production . . . or a lightweight, extra-porous felt for faster drying . . . or an asbestos felt to withstand the advanced temperatures involved in high-speed production of Kraft and other heavy papers — HOOPERWOOD has the felt to fit the need.

Make your next dryer felt *right* — specify HOOPERWOOD.

And for your Carrier Rope requirements, specify HOOPERWOOD-Sheahan Carrier Rope. Until Hooper engineers designed this high-grade product, rope of comparable quality was obtainable only from foreign sources.

WM. E. HOOPER & SONS CO.

New York **PHILADELPHIA** Chicago

Mills: WOODBERRY, BALTIMORE, MD.

HOOPERWOOD DRYER FELTS

COTTON AND ASBESTOS

WORLD, is the contestant which by a majority vote of five judges has in their opinion made the best safety achievement among the pulp and paper mill participants in the contest based on frequency, manhours worked, physical conditions, and other contributing factors.

Grand Prize Winner!

The winner of the grand prize in the 1948-49 Contest is the *Tyrone (Pa.) Mill of West Virginia Pulp and Paper Company.* This mill tops the list in Group B of Division 1 with a frequency rate of .59.

The *Tyrone Mill* is a completely self-contained pulp and paper mill, with related chemical operations. Except for the Christmas holiday shutdown, the mill operated continuously seven days a week, twenty-four hours a day, during the entire contest period. In that time an average of 820 employees worked a total of 1,694,184 manhours with but a single disabling injury. The one lost-time accident was not incurred on an operating job.

Brief Outline of Activities:

The safety program at *Tyrone* is under the direction of a Safety Director, assisted by a Safety Committee made up of representatives of top management, the plant doctor, plant nurse, and a mixture of supervisory employees and hourly-paid employees, to a total of 32 persons.

Members serve on a permanent basis. When vacancies occur due to retirement, severance, or resignation, new members are elected by secret ballot by the balance of the committee.

The committee carries out a continued program of safety training. Investigation, report, and discussion of each accident, except the most trivial, whether lost-time or not, is part of its routine procedure. Designated committee members carry out regular and frequent plant inspections for unsafe conditions and hazardous operations.

The company sponsors two inter-mill Safety Contests. In-plant activity at *Tyrone* includes semiannual banquets for all members of all groups that complete a six months' period without a lost-time accident.

It is my honor and pleasure to present at this time a lady who needs no introduction to those who have attended our meetings in the last ten years. We love and cherish her for the sweet and encouraging spirit she brings to our meetings. As Vice-President and Treasurer of Fritz Publications, Chicago, Mrs. Fritz is representing her husband who, as a pioneer of safety in the Pulp and Paper Mills of North America, personally awarded this prize to mill winners for many years previous to his death. With reverence and joy, I present to you our friend and ask her to award the Grand Prize.

A more extensive summary of discussions that evolved from Questions and Answers at the Round Table Meetings, will appear in a subsequent issue of this magazine. Also, abridgments of several of the addresses given before the Pulp and Paper Section will be found in this issue. See Convention Papers . . . Abridged.

Illustrations used with this story were provided through courtesy of the Photographic Department, National Safety Council.

Certificate of Achievement

Division I—Pulp and Paper Mills

Group A

The Champion Paper & Fibre Co., Pasadena, Texas
Brown Corp., Ltd., LaTuque, P.Q., Can.
Consolidated Paper Corp., Ltd., Shawinigan Falls, P.Q., Can.
The Mead Corp., Chillicothe, Ohio
The Mead Corp., Kingsport, Tenn.
Price Bros. & Co., Ltd., Kenogami, P.Q., Can.
Price Bros. & Co., Ltd., Riverbend, P.Q., Can.
Bathurst Power & Paper Co., Ltd., Bathurst, N.B., Can.
Kimberly-Clark Corp., Kimberly, Wis.
Container Corp. of America, Philadelphia, Pa.
The Philip Carey Mfg. Co., Lockland, Ohio
The Flintkote Co., New Orleans, La.
Kimberly-Clark Corp., Niagara Falls, N.Y.
Gulf States Paper Corp., Tuscaloosa, Ala.
The Champion Paper & Fiber Co., Canton, N.C.
Kieckhofer Container Co., Delair, N. J.
International Paper Co., Palmer, N.Y.
Anglo Newfoundland Development Co., Ltd., Grand Falls, Newfoundland
Crown Zellerbach Corp., Camas, Wash.
West Virginia Pulp & Paper Co., Luke, Md.
Howard Smith Paper Mills Ltd., Cornwall, Ont., Can.
West Virginia Pulp & Paper Co., Covington, Va.

Group B

The Flintkote Co., Meridian, Miss.
Container Corp. of America, Cincinnati, Ohio.
Quebec North Shore Paper Co., Baie Comeau, P.Q., Can.
Marinette Paper Co., Marinette, Wis.
P. H. Glatfelter Co., Spring Grove, Pa.
Kimberly-Clark Corp., Memphis, Tenn.
Thilmany Pulp and Paper Co., Kaukauna, Wis.
St. Croix Paper Co. Woodland, Me.
Fraser Paper, Ltd., Madawaska, Me.
American Coating Mills, Div. of Owens-Illinois Glass Co., Elkhart, Ind.
Kimberly-Clark Corp., Niagara, Wis.
International Paper Co., Chisholm, Me.
North Carolina Pulp Co., Plymouth, N.C.
The Mead Corp., Lynchburg, Va.
Nekoosa-Edwards Paper Co., Port Edwards, Wis.
Hoberg Paper Mills, Inc., Green Bay, Wis.
The E. B. Eddy Co., Ottawa, Ont., Can.
Rayonier, Inc., Port Angeles, Wash.
Bemis Bros. Bag Co., Peoria, Ill.
Rayonier, Inc., Shelton, Wash.
Crossett Paper Mills, Crossett, Ark.

Group C

International Paper Co., Southern Kraft Div., York Haven, Pa.
Donohue Bros., Ltd., LaMalbaie, P.Q., Can.
Certain-teed Products Corp., E. St. Louis, Ill.
Blandin Paper Co., Grand Rapids, Minn.
Neenah Paper Co., Neenah, Wis.
Thilmany Pulp and Paper Co., Kaukauna, Wis.
West Virginia Pulp & Paper Co., Williamsburg, Pa.
Hollingsworth & Vose Co., East Walpole, Mass.
Paterson Parchment Paper Co., Bristol, Pa.
National Container Corp. of Va., Big Island, Va.
Certain-teed Products Corp., Marseilles, Ill.
Marathon Corp., Menominee, Mich.
The Lawrence Paper Co., Lawrence, Kans.
Consolidated Water Power & Paper Co., Stevens Point, Wis.
Rising Paper Co., Housatonic, Mass.
Port Huron Sulphite & Paper Co., Port Huron, Mich.
The Beveridge Paper Co., Indianapolis, Ind.

Group D

Manistique Pulp & Paper Co., Manistique, Mich.
United States Gypsum Co., Oakmont, Pa.
National Gypsum Co., Kalamazoo, Mich.
Container Corp. of America, Los Angeles, Cal.
Crown Zellerbach Corp., Lebanon, Ore.
Ward Paper Co., Merrill, Wis.
Container Corp. of America, Circleville, Ohio
Central Fibre Products Co., Inc., Tama, Ia.
Whiting Plover Paper Co., Stevens Point, Wis.
Strathmore Paper Co. (Mill No. 2), Woronoco, Mass.
International Paper Co., Livermore Falls, Me.
Rogers Corp., Goodyear, Conn.
The Quaker Oats Co., Pekin, Ill.
Container Corp. of America, Wilmington, Del.
The Flintkote Co., Little Ferry, N.J.

Division II—Paper and Board Re-manufacturing

Group A

Southern Advance Bag & Paper Co., Inc., Hodge, La.
National Blank Book Co., Holyoke, Mass.
Continental Can Co., Inc., Van Wert, Ohio
Container Corp. of America (35th Street), Chicago, Ill.

Group B

Fort Wayne Corrugated Paper Co., Hartford City, Ind.
Container Corp. of America, Fort Worth, Texas
Container Corp. of America, Rock Island, Ill.
Container Corp. of America, Anderson, Ind.
The Hankins Container Co., Cleveland, Ohio
Container Corp. of America (Boyle Ave.), Los Angeles, Cal.
The Ohio Boxboard Co. (Container Div.), Rittman, Ohio

Group C

Bird & Son, Inc., Chicago, Ill.
Container Corp. of America, Baltimore, Md.
Bird & Son, Inc., Shreveport, La.
Certain-teed Products Corp., Kansas City, Mo.
South West Box Co., Sand Springs, Okla.
Gaylord Container Corp., Atlanta, Ga.
Orchard Paper Co., St. Louis, Mo.
Allied Paper Mills (Bardeen Div.), Kalamazoo, Mich.

▼

SAFETY SCORES

▶▶▶ IN THE NEW paper industry contest (January 1 to December 31, 1949) 51 contestants had perfect records (including 7 with below minimum exposure) at the end of the eighth month. This number represented 14 per cent of the total number of contestants. At the end of the eighth month in the previous contest, only 10 per cent showed perfect records. Participants with perfect scores at the end of August were:

Division I—Paper and Pulp Mills

Group A (None)

Group B

National Container Corp. (Kraft Pulp Mill) Jacksonville, Fla.
West Virginia Pulp & Paper Co., Williamsburg, Pa.

Group C

Marathon Corp., Menominee, Mich.
National Vulcanized Fibre Co., Yorklyn, Del.
Price Bros. & Co., Ltd., Jonquiere, P.Q., Canada
Congoleum-Nairn, Inc., Cedarhurst, Md.
National Vulcanized Fibre Co., Newark, Del.
Neenah Paper Co., Neenah, Wis.

Group D

Certain-teed Products Corp., E. St. Louis, Ill.
Container Corp. of America, Carthage, Ind.
Crown Zellerbach Corp. (C-W Paper Div.), Lebanon, Oregon
Mead Corp., Harriman, Tenn.

Mead Corp. (Wheelwright Div.), North Leominster, Mass.
Armstrong Cork Co., Pensacola, Fla.
Marathon Corp., Ashland, Wis.
U. S. Gypsum Co., Oakmont, Pa.
Strathmore Paper Co. (Mill No. 1), Woronoco, Mass.
Ward Paper Co., Merrill, Wis.
Fort Wayne Corrugated Paper Co., Vincennes, Ind.
Hollingsworth & Whitney Co., Madison, Maine
National Gypsum Co., Newburgh, N. Y.
Riegel Paper Corp., Riegelsville, N. J.
Spaulding Fibre Co. (Hayes Plant), No. Rochester, N. H.

Division II—Paper and Board Remanufacturing

Group A (None)

Group B

Marinette Paper Co., So. Glens Falls, N. Y.
Container Corp. of America, Cincinnati, Ohio
National Container Corp. (Container Div.), Jacksonville, Fla.
Container Corp. of America, Rock Island, Ill.

Group C

Bird & Son, Inc., Chicago, Ill.
Fibreboard Products, Inc., South Gate, Calif.
Kimberly-Clark Corp., Appleton, Wis.
Container Corp. of America, Baltimore, Md.
Bird & Son, Inc., Shreveport, La.
South West Box Co., Sand Springs, Okla.
Pillsbury Mills, Inc., Wellsburg, West Va.
Certain-teed Products Corp., Kansas City, Mo.
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Scott Paper Co., Sandusky, Ohio
Fort Wayne Corrugated Paper Co., Rochester, N. Y.
ABC Corrugated Box Co., Minneapolis, Minn.
Certain-teed Products Corp., Buffalo, N. Y.
Flintkote Co., Hollywood, Calif.
Bay West Paper Co., Green Bay, Wis.
Green Bay Box Co., Green Bay, Wis.
Lloyd A. Fry Roofing Co., San Leandro, Calif.
Lloyd A. Fry Roofing Co., Robertson, Mo.

▼

▶▶▶ A SUPPLY OF TIMBER, enough to meet all commercial and other needs, exists in the United States, according to H. J. Malsberger, managing director of the Southern Pulpwood Conservation Association. This statement was given during an address before delegates at the annual convention of the Association of State Foresters held recently in Hot Springs, Arkansas. Mr. Malsberger said his association had formulated, and was carrying through, an educational program to insure conservation of forest resources.

HOW Big Businesses are using CLARK Methods and Machines as the quick, sure means **TO** lower that all-important break-even point, and the amazing extent to which they **SAVE** production time, human effort, storage capacity and **MONEY**

— are described and pictured in the MATERIAL HANDLING NEWS

* This stimulating "tell how" magazine, and Clark's invaluable "show how" motion pictures, rich with proved money-saving ideas that *you, too, can use,* will be sent to you at no cost. No obligation! Simply request them on your business letterhead.

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INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 22, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

The National Guard Defends America—Join Now!

The Line of Most Resistance

REX Pulp Mill Chains

Maximum wear resistance and the *ultimate* in *shock resistance* are built-in features of all Rex Pulp Mill Chains. These quality chains are designed for dependability . . . for long-lasting service under every type of operating condition. Right through the mill, there's a Rex Chain that's right for every operation from log haul to the digesters.

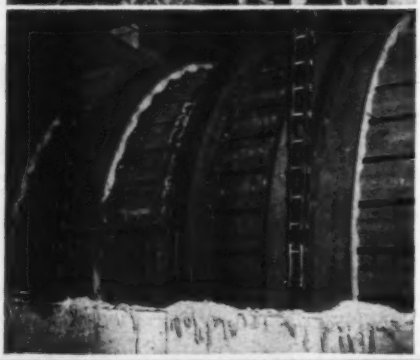
With standard Rex Chains, you can forget about production hold-ups due to drive or conveyor failures. Rex Chains keep going under loads and operating conditions where ordinary chains would quickly fail.

For complete information and selection assistance, call your Rex Field Office or write direct to Chain Belt Company, 1714 West Bruce Street, Milwaukee 4, Wis., for your copy of Catalog 48-27.

This wood yard conveyor uses husky Rex Mill Refuse and Log Chains. Designed with alternating cast block links and steel side bar links, these chains provide a large sliding surface and maximum bearing area.

Rex H-Type Conveyor Chains are used in this refuse conveyor. Operating in shallow troughs, these chains with their great width assure large capacity at low speeds. Wide wearing shoes, reinforced barrel faces and vertical lugs on the side bars provide extra wear resistance.

One of the most popular chains in the wood room is husky Rex Combination. Inside block links of malleable iron or Rex Z-Metal and high carbon steel side bars assure plenty of wear-resistance. Chain links can be turned over when wear does take place, assuring double life.



Plenty of drive for the barking drum is assured by sturdy Rex Chabelco Steel Chain. Combining relatively light weight with high strength, it withstands the severe vibration and shocks . . . lasts longer.

CHAIN BELT COMPANY — REX

DRIVE AND CONVEYOR CHAINS

FIRST FOR LASTING SERVICE

now available from stock

Associations.....

Divisional Meetings of the Superintendents Association

PENNSYLVANIA-NEW JERSEY-DELAWARE DIVISION

The annual fall meeting of the Pennsylvania-New Jersey-Delaware Division of The American Pulp and Paper Mill Superintendents Association was held September 30 and October 1 at St. Patrick's Inn, Pocono, Pennsylvania.

New Officers elected were: *Chairman*—Glen Renegar, Container Corporation of America, Philadelphia; *First Vice Chairman*—John O. Sproute, Beach & Arthur Paper Co., Modena (Pa.); *Second Vice Chairman*—Elmer Mitchell, McDowell Paper Mills Division of the Glassine Paper Co., Philadelphia; and *Third Vice Chairman*—George Suydam, Riegel Paper Corp., Riegelsville (N.J.). Alice R. Dow-secretary-treasurer of the Division for the past 25 years, will continue to serve.

The new chairman, Glen Renegar, conducted the business meeting at which the following papers were presented: "The Relation of a Maintenance Program to Felt Operations," by L. M. Woodside, of the Albany Felt Co.; "Paper Machine Auxiliaries," by John C. Harper, Downingtown Manufacturing Co.; and "Control Flow of the Noble & Wood Victory Beater," by Frank Hayes, sales manager, Noble & Wood Machine Co.

A golf tournament was held on Friday afternoon and there was a luncheon on Saturday with Ralph Kelly, president of Philadelphia's Chamber of Commerce as the speaker.

Finale of the meeting was the banquet on Saturday night. Guests were entertained with a professional floor show and enjoyed dancing. During the festivities of the evening, Alice Dow was presented with a gift in honor of her twenty-five years of service as the Division's secretary-treasurer.

NORTHWESTERN DIVISION

A two-day fall meeting held by the Northwestern Division of the Superintendents Association at Duluth, Minnesota, October 4-5 was filled with practical subjects of importance and timeliness to those who attended.

Subjects discussed at the sessions, and the men who acted as moderators of those sessions were:

Bark Disposal — Harold Blair, Northwest Paper Co., Cloquet, Minn.

Kraft Bleaching—Ed Crowley, also of Northwest Paper Co.

Groundwood Bleaching, Lycoid Gums, and Hercules Automatic Emulsifying Process—G. W. Goelz, Jr., Blandin Paper Co., Grand Rapids, Minn.

Industrial Protective Coatings — Mace Harris, Northwest Paper Co.

The early part of the morning session of the second day was devoted to business matters. At this time the following officers were elected to serve for the coming year: *Chairman*—Laurin Sabatke, Marathon Corp., Rothschild, Wis.; *First Vice Chairman*—Mace Harris, Northwest Paper Co., Cloquet, Minn.; *Second Vice Chairman*—Paul West, Thilmany Pulp & Paper Co., Kaukauna, Wis.; *Secretary*—Eugene G. Ingalls, Wausau Paper Mills Co., Brokaw, Wis. Grover Keeth, Marathon Corp., was re-elected as trustee to serve for three years.

A large number of entertainment events had been arranged for the enjoyment of the members and guests. Highlighting the dinner-dance was the presentation by C. I. McNair, Jr., Northwest Paper Company, of life memberships in the Association to the following men: R. W. Haddock, Dr. Otto Kress, W. K. McNair, and O. L. LeRoux. Certificates to Dr. Kress and Mr. Haddock were presented in absentia.

CONNECTICUT VALLEY DIVISION

The Red Lion Inn, Stockbridge, Massachusetts, was the scene of the fall meeting of the Connecticut Valley Division of the Superintendents Association, held October 1.

At the short business session which opened the meeting, the Division's officers were re-elected to serve another year: *Chairman*—Andrew H. Gilmour, C. H. Norton Co., North Westchester, Conn.; *First Vice Chairman*—Thomas J. Flaherty, Case & Risely Press Paper Co., Oneco, Conn.; *Second Vice Chairman*—Alfred L. Montagna, Southworth Co., West Springfield, Mass.; and *Secretary-Treasurer*—R. E. Kiley, A. E. Staley Manufacturing Co., Longmeadow, Mass.

The subject-theme of the meeting was *materials handling*. William Butler related some of his experiences as a materials handling consultant. Martin Fouche, of Lewis Shepard Products, Inc., spoke on the use of mechanical lift trucks in the paper industry. His talk was followed by a movie produced by his company, which showed various applications for the equipment. Fred Noone, Signode Steel Strapping Co., showed a movie that depicted the use of steel strapping in carloadings.

Chairman Gilmour announced that a life membership in the Association had been awarded to both Robert B. Wolf and William Dalrymple.

George W. Craigie, secretary-treasurer of the national Superintendents Association, was present and spoke on the joint safety program of the Superintendents Association and the American Paper and Pulp Association. He also discussed some of the national Association's other activities.

NORTHEASTERN DIVISION

Nearly 250 members and guests attended the fall meeting of the Northeastern Division of the Superintendents Association held September 22-24 at Poland Spring House, Poland, Maine.

Officers elected to serve for the coming year are: *Chairman*—Arthur J. Brosius, Brown Co., Berlin, N. H.; *First Vice Chairman*—John Coppens, Fraser Paper, Ltd., Madawaska, Maine; *Second Vice Chairman*—Verne C. Watters, Gilman Paper Co., Gilman, Vermont; *Third Vice Chairman*—James M. Wishart, Oxford Paper Co., Rumford, Maine; and *Secretary-Treasurer*—Marian L. Stewart, Lincoln, N. H. (Mrs. Stewart has served the Division for more than a decade in this office.)

Two papers presented at the meeting were well received and were followed by a question-and-answer period of some length. Leon Smith, of Downingtown Manufacturing Co., Downingtown, Pa., spoke on "Building Versatility into a Fourdrinier." He made use of a series of lantern slides. Bruno E. Prevost, of Emerson Mfg. Co., Lawrence, Mass., spoke on the subject "Jordan Plug Pressure Control and Recording Systems." With the assistance of A. C. Clarke, of John W. Bolton & Sons, Inc., Mr. Prevost demonstrated the actual operation of the system through the use of a unit on exhibit.

George W. Craigie, secretary-treasurer of the national Association, was present. He sat with the incoming of-

ficers outlining plans of the national Association. He spoke again at the banquet.

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CANADIAN TECH. BRANCH MEETS AT FRASER COS. LTD.

Ninety delegates attended a meeting of the Maritime-Newfoundland Branch of the Technical Section of the Canadian Pulp and Paper Association, held at Fraser Companies, Ltd., Edmundston (N.B.). George C. Beatteay, sulphite superintendent of Fraser, was chairman of the meeting.

A paper on the subject of the automatic cutter and layboy in use in the Gaspesia Sulphite Co., Ltd., was read by G. Jackson, of Chandler, Quebec. L. Miller, of the N.B. International Paper Company, Dalhousie, read a paper dealing with the storage and use of groundwood pulp.

Delegates made a tour of the Fraser Companies plant at Edmundston.

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ALLEN ABRAMS SPEAKS ON RESEARCH OPPORTUNITY BEFORE OHIO SEC. TAPPI

Before a large crowd at a meeting of the Ohio Section of TAPPI, held October 13 at the Manchester Hotel, Middletown, Ohio, Allen Abrams spoke on the subject "Opportunity through Research."

Mr. Abrams is vice president in charge of research and development of the Marathon Corporation, Rothschild, Wisconsin. He outlined the need for well organized research and how research has played a prominent part in developing new uses for paper in many fields of industry.

A discussion period followed the talk by Mr. Abrams, after which E. J. McClane, of Hercules Powder Company, presented a film entitled "Problem Solution Results."

Chairman Arthur Thurn (left), Ohio Section of TAPPI, and Allen Abrams, vice president in charge of research and development, the Marathon Corp. Mr. Abrams was guest speaker at the Section's October meeting

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NEW LAKE ERIE GROUP HOLDS ITS FIRST MEETING

The first meeting of the newly-formed Lake Erie Papermakers' and Converters' Association was held at the Hickory Grill in Cleveland on October 7. About 128 men of the papermaking, converting, and related industries fields were in attendance.

The nominating committee, which had been appointed by the temporary arrangements committee, countered by nominating the temporary committee members as the Group's first officers. The slate was accepted unanimously, electing the following to serve for the coming year: Chairman—Lew Burnett, The Ohio Boxboard Co.; First Vice Chairman—Bill Manor, Consolidated Paper Co.; Second Vice Chairman—Pete Spring, Chase Bag Co.; Secretary-Treasurer—Bill Schoenberg, Lord and Schoenberg.

An executive committee for the coming year was elected as follows: Art Cheeley, Hankins Container Co.; Earl Knapp, Auglaize Box Board Div. (Weston Paper & Mfg. Co.); Art Goetz, River Raisin Paper Co.; Karl Krancher, Ball Bros. Co.; Jack Noll, Munroe Falls Paper Co.; Mel Kernan, The Ohio Boxboard Co.; P. H. McDowell, A. L. Garber; and Bill Hasselo, Container Corporation of America.

Special guest at the meeting was R. G. Macdonald, national secretary of the Technical Association of the Pulp and Paper Industry.

Lew Burnett (Ohio Boxboard Co.) addresses first meeting of Lake Erie Papermaker's and Converter's Ass'n as its chairman. Ken Latimer (L), of Time Inc., and R. G. Macdonald, secretary of national TAPPI (R), were speakers

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KALAMAZOO SEC. TAPPI HEARS TWO SPEAKERS ON WATER DISPOSAL & USAGE

At the first fall meeting of the Kalamazoo Valley Section of TAPPI, the subject discussed was water availability, usage and disposal in paper mills. Dr. Stephen A. Kukolich, Lee Paper Company, Vicksburg, Michigan, presided.

Two speakers on the program were: C. F. Hauck, Pittsburgh, of Hall Laboratories, Pittsburgh; and Miss Katherine Stokes, member of TAPPI, and head librarian at Western Michigan College.

It was announced at the meeting that John Dam, Allied Paper Mills, Kalamazoo, had been elected secretary, to replace Dr. Victor Burstein, who is now in business in Port Huron. Also, Leon Mimms was elected to the board of directors to fill vacancy caused by move of Paul F. Bartholomew, of Hawthorne Paper Company, to Minneapolis.

OFFICERS OF OHIO SECTION OF TAPPI—Left to right: John L. Clouse (Oxford Miami Paper Co.), corres. sec'y; Don J. Goodman (Sorg Paper Co.), vice chairman; Arthur Thurn (Champion Paper & Fibre Co.), chairman; R. D. McCarron (Stein, Hall Co., Inc.), treasurer; and Earl Knapp (Weston Paper & Mfg. Co.) recording secretary

▼

CARBORUNDUM ENTERTAINS WEST. N. Y. TAPPI GROUP

The regular monthly meeting of the Western New York Group of the Technical Association of the Pulp and Paper Industry was held October 12 at the plant of the Coated Products Division of the Carborundum Company, Wheatfield, New York.

As guests of Carborundum, some 50 members were treated to a tour of the new coated products plant, a feature of which was the inspection of the No. 7 machine which is said to be the largest and most modern coated abrasive machine of its type in the world.

Following the tour, E. Dent Lockey, assistant director of industrial relations for Carborundum, gave an interesting talk on the founding of the company, its growth and present position in the abrasive field. A discussion of the types of raw materials used for the coating base and their defects was then presented by G. J. Keller, plant superintendent at Wheatfield.

A dinner was served in the company's cafeteria, after which members of the Group listened to a talk on "Pulpstones" by W. W. Barrett, sales engineer for paper mill abrasive for Carborundum. His talk was illustrated with slides showing the construction of pulpstone segments and the types used for the preparation of different grades of groundwood pulps.

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DATES FOR ANNUAL AND SUMMER MEETINGS OF THE CANADIAN TECH. SECTION

The annual meeting of the Technical Section, Canadian Pulp and Paper Association will be held at the Mount Royal Hotel, Montreal, January 25, 26, and 27, 1950. Reservations should be made early by addressing Clarence K. Dwindell, manager of the Hotel.

The Technical Section's summer meeting will be held at Chateau Frontenac Hotel, Quebec City, May 31, June 1 and 2. Reservations through George Jessop, manager of the Hotel.

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▶▶▶ AN ENORMOUS spending program to bolster a dwindling guest list was announced by hotel officials at the 34th National Hotel Exposition in New York the week of November 6.

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COMING EVENTS

Nov. 28-Dec. 3—22nd Exposition of Chemical Industries, Grand Central Palace, New York City.

Dec. 8—Ohio Section of TAPPI, Manchester Hotel, Middletown, Ohio.

1950

Jan. 16-19—First Plant Maintenance Show, Auditorium, Cleveland, O.

Feb. 19-24—Paper Week. Annual meeting of the American Paper and Pulp Association and paper groups, at the Waldorf-Astoria Hotel, New York City.

April 4-8—National Production Exposition, sponsored by Chicago Technical Societies Council. Stevens Hotel, Chicago.

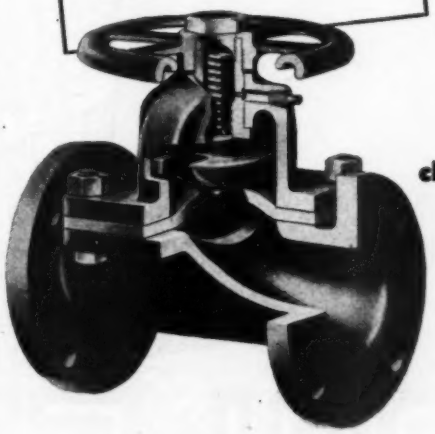
STATED MEETINGS

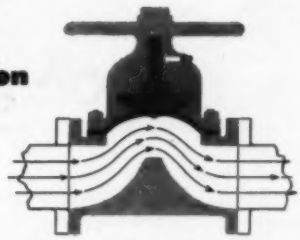
Chicago section of TAPPI meets the third Monday of each month at the Chicago Bar Association, Chicago, Ill.

A group of TAPPI members and friends in Cleveland will sponsor a series of dinner meetings to be held on the first Friday of each month during the coming winter. The name tentatively chosen for this group is Lake Erie Papermakers and Converters Association.

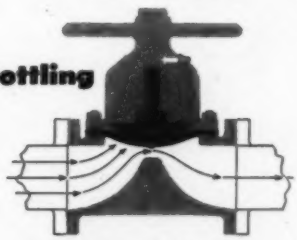
This Simple Principle

makes HILLS-McCANNA diaphragm valves unexcelled for handling corrosive materials, slurries and semi-solids

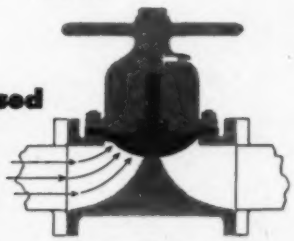




Compressor is raised, lifting diaphragm by means of a stud molded into the material.



Compressor and diaphgram partially lowered. Compressor design guides and supports diaphragm.



Compressor presses diaphragm tightly against weir pinching off flow and making a tight seal.

● When it comes to valving hard-to-handle fluids, the simple pinch clamp principle of Hills-McCanna valves (see above) eliminates most ordinary valve troubles. There is no leakage, no packing and material handled cannot contaminate or be contaminated by the working parts. Hills-McCanna Saunders patent diaphragm valves are the answer to many of the most serious valve problems. Write for full details and ask for a copy of Catalog V-48. HILLS-McCANNA CO. 2433 W. Nelson Street, Chicago 18, Illinois.

FOR 66° Bé SULPHURIC
Hills-McCanna now offers new plastic diaphragms for handling 66° Bé sulphuric. Write for details.

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Force Feed Lubricators • Magnesium Alloy Castings

FOR DEPENDABILITY...
SERVICE...UNIFORMITY...
FINISH...DESIGN...

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APPLETON WOOLEN MILLS - APPLETON, WIS.

Names in the News...

PAUL BARTHOLOMEW HAS LEFT HAWTHORNE—TO BE ASSOCIATED WITH MANDO

A new member of the Paper Division of Minnesota and Ontario Paper Company, Minneapolis, is Paul W. Bartholomew, who has been appointed assistant sales manager.

Mr. Bartholomew goes with Mando directly from the Hawthorne Paper Company, Kalamazoo, Michigan, where he had been technical director since 1945. His assignments with Hawthorne included extensive development work in the improvement of paper quality, with emphasis on technical grades. He also supervised the company's customer sales and technical advisory service department.

A graduate of Purdue University, with a degree in chemical engineering, Mr. Bartholomew was associated with Hercules Powder Company for 15 years prior to joining Hawthorne. In 1932, he began working exclusively with the chemicals manufactured by Hercules for the papermaking industry. He was headquartered at Kalamazoo and assisted leading paper manufacturers throughout the Middle West with chemical problems.

Mr. Bartholomew is a member of the American Chemical Society, TAPPI, and the Superintendents Association, as well as the American Institute of Chemical Engineers.

Paul W. Bartholomew Harry K. Collinge

HARRY COLLINGE NOW GEN. MANAGER CANADA PAPER CO.

The appointment of Harry K. Collinge as general manager of Canada Paper Company has been announced by H. Crabtree, company president.

Mr. Collinge is a graduate of the London University, Imperial College of Science and Technology. He joined the Howard Smith Paper Mills, Ltd., in 1932 as research and development chemist. On leave of absence from the company during World War II, he served with Allied War Supplies Corporation, eventually becoming director of chemicals and explosives. He rejoined Howard Smith Paper Mills in 1946, serving as executive assistant to the president of its affiliated company, Canada Paper Company, until his present appointment.

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R. B. WOLF, JR., IS NOW ASSOCIATED WITH FOXBORO

The staff of instrument engineers at the home office of The Foxboro Company, Foxboro, Massachusetts, has acquired Robert B. Wolf, Jr. as assistant to W. S. Yunker, sales manager, Pulp and Paper Division.

Mr. Wolf has had extensive experience in pulp and paper manufacture. He was associated with the Crow-Williamette Paper Company, Camas, Washington, for three years and later joined the Soundview Pulp Company at Everett; then the Scott Paper Company at Chester, Pennsylvania. He spent the war years with E. I. du Pont de Nemours & Company at the Belle Works in West Virginia, producing synthetic ammonia and lucite, and also at the Deepwater, New Jersey, plant where various organic chemicals were made.

Recently, Mr. Wolf was one of the plant engineers of the San-Nap-Pak Manufacturing Company at Mount Tom, Massachusetts, which makes sulphite pulp and tissue products.

Mr. Wolf's father, R. B., Sr., recently retired as general manager of the Weyerhaeuser Timber Company's Pulp Division, Longview, Washington.

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VANCE EDWARDES LEAVES I. P. HUDSON RIVER MILL—SUCCESSOR, F. J. McCOURT

Vance P. Edwardes, who resigned on September 1 as sulphite superintendent of the International Paper Company's Hudson River mill, Palmer, New York, has been succeeded by F. J. McCourt, who has been technical control superintendent of that plant since 1937.

Mr. McCourt is a member of TAPPI; he is a past chairman of the Empire State Section. Also, he is past president of the Hudson River Mill Technical Association.

Mr. Edwardes has become a paper mill consultant. He is a past president of the national body of TAPPI.

OLLIE MESSNER HAS NEW POST WITH SANGAMON

Announcement is made of a new company connection for Ollie W. Messner, formerly with Empire Box Corporation, Stroudsburg, Pennsylvania. Mr. Messner is now superintendent and production manager of the mill of Sangamon Paper Mills, Inc., at Eaton, Indiana.

The Sangamon mill has been changed over from .009 straw to high grade boxboard. The present production includes such folding grades as bleached Manila, white vat-lined board, and patent coated board. The paper machine installation consists of an 81-inch, 7 cylinder machine.

Mr. Messner is widely known in the industry. He is active in the affairs of The American Pulp and Paper Mill Superintendents Association, and served as national president of that body for the year 1948-1949.

Ollie W. Messner Henry T. Sulcer

PERSONNEL ANNOUNCED FOR GRAVER WATER COND. CO.

Appointment of Henry T. Sulcer as general manager of Graver Water Conditioning Company, New York City, has been announced by E. N. Gosselin, president of Graver Tank & Manufacturing Company.

Assistng Mr. Sulcer as assistant general manager is Edward W. Welp, formerly sales manager of the Graver Water Treating Division, who will make his headquarters in the Chicago office. S. D. Barr, previously in charge of eastern district sales, has been advanced to the position of general sales manager with offices in New York City.

The Technical Division of the company is now headed by Vincent J. Calise, who has had many years of experience in the selection of processes and the design of equipment for all liquid conditioning services and in solving chemical and mechanical water treatment problems.

The Water Conditioning Company recently was formed to extend the water treatment and liquid conditioning facilities of the company which has manufactured this type of equipment for 40 years (Cf. P.I. and P.W., Sept., 1949).

WALMSLEY IS VICE PRES. IN CHARGE PRODUCTION— CAMERON MACHINE CO.

At the October meeting of Cameron Machine Company's board of directors, Charles A. Walmsley was named vice president in charge of production.

In June Mr. Walmsley joined Cameron as special assistant to the president. Later, he became head of production. Prior to his association with Cameron, he was with the International Derrick and Equipment Company, Marietta, Ohio, as works manager.

Charles A. Walmsley

Floyd J. Gunn

DOW PROMOTES FLOYD GUNN

Head of coatings sales is the promotion given Floyd J. Gunn by The Dow Chemical Company, Midland, Michigan.

Mr. Gunn replaces C. Benson Branch, who recently was named manager of the company's technical service and development division. He will be located at the main office in Midland.

Ten years ago, Mr. Gunn became associated with Dow following his graduation. He has successively been located in the St. Louis office, solvent sales staff; five years in plastic sales division at Midland; supervisor of plastics sales for the Chicago territory.

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▶▶▶ *Harry A. Porter,* vice president in charge of sales for Harris-Seybold Company, Cleveland, has been named president of the Direct Mail Advertising Association for the coming year. Mr. Porter was previously a vice president of the DMAA. He was advanced to the presidency at the Association's 32nd annual conference held in Chicago September 23.

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JOHN LARIGAN WITH ST. REGIS BAG DIVISION IN MINNEAPOLIS OFFICE

From head of the St. Regis field promotion staff, with headquarters in New York City, John A. Larigan has been transferred to the company's Multiwall Bag Division at Minneapolis, where he will act as sales representative. Mr. Larigan has been connected with St. Regis sales promotion staff since 1946; since 1949 he has functioned as head of that work.

Another appointment in the Minnesota area is that of Howard C. Bryan as field engineer. He will also participate in bag sales activities. Mr. Bryan has handled sales and engineering both in the Denver and Minneapolis territories.

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ST. REGIS MOVES PLANTZ TO POSITION IN CHICAGO

Transfer of C. Henry Plantz, resident manager of St. Regis Paper Company, Deferiet, New York, to Chicago, has been announced. In Chicago, Mr. Plantz will become service manager of the manufacturing department, printing, publishing and paper division of the firm.

Mr. Plantz has been employed by St. Regis for the past 29 years. From 1920 to 1935 he was chief chemist at Deferiet. For the next three years, he was in the laboratory of the company's Oswego plant before being assigned as plant manager at Harrisville where he served six years.

About five years ago, Mr. Plantz was named assistant resident manager of the St. Regis plant at Deferiet, serving in that capacity until being appointed resident manager last July.

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HOHMAN-KYLE TRANSFERRED BY BLACK-C AND SHARTLE

The appointment of R. W. Hohman as sales representative in the Virginia area has been announced by Shartle Brothers Machine Company, Middletown, Ohio. Mr. Hohman has represented the Black-Clawson, Shartle, Dilts organization in New York, New Jersey, Pennsylvania, and Delaware area for the past four years; he has been associated with the Shartle Division for the past twelve years.

R. W. Hohman

C. W. Kyle

C. W. Kyle has been named to represent the Shartle Division of Black-Clawson in the Ohio-Michigan area. Prior to his transfer to this area, Mr. Kyle for the past four years has represented the Black-Clawson, Shartle, Dilts organization in the New England area.

FRANCIS DENNIS MADE ASST. GENERAL SUPT. OF DIAMOND MATCH CO.

New assistant general superintendent of The Diamond Match Company's plant in Plattsburg, New York, is Francis A. Dennis. For the past year and a half, Mr. Dennis has been plant superintendent for Sitroux, Inc., Utica, New York.

Mr. Dennis spent nearly 25 years with the Scott Paper Company (Chester, Pa.) in production-management capacities. When Scott purchased the International Paper Company mill at Fort Edwards, New York, in 1946, he supervised its rehabilitation and the selection of new machinery. He was superintendent of that plant before going with Sitroux.

Francis A. Dennis

Elias Atkins III

E. C. ATKINS III NOW A VICE PRES. OF COMPANY

Formerly manager of mill sales, Elias C. Atkins III has been promoted to assistant to the vice president of E. C. Atkins and Company, Indianapolis, Indiana. He will make his new headquarters at the company's factory branch in Portland, Oregon. He will travel extensively in that territory, calling on mills, woodworking plants, etc.

Mr. Atkins has traveled extensively calling on saw users in the United States, and particularly on the Pacific coast where he has many friends whom he will be calling upon very soon.

▼

GEO. HARPER LEAVES MEAD FOR SAFETY PROFESSORSHIP

Formerly director of safety for The Mead Corporation, Chillicothe, Ohio, George W. Harper recently accepted the positions of associate professor of mechanical engineering; associate professor of safety education; and executive officer, All-university Fire and Safety Control Board, at the University of Illinois, Urbana.

Mr. Harper is a person of high standing in the scientific principles of safety education. He has had long experience with several large industrial companies and has been active in many national bodies devoted to accident pre-

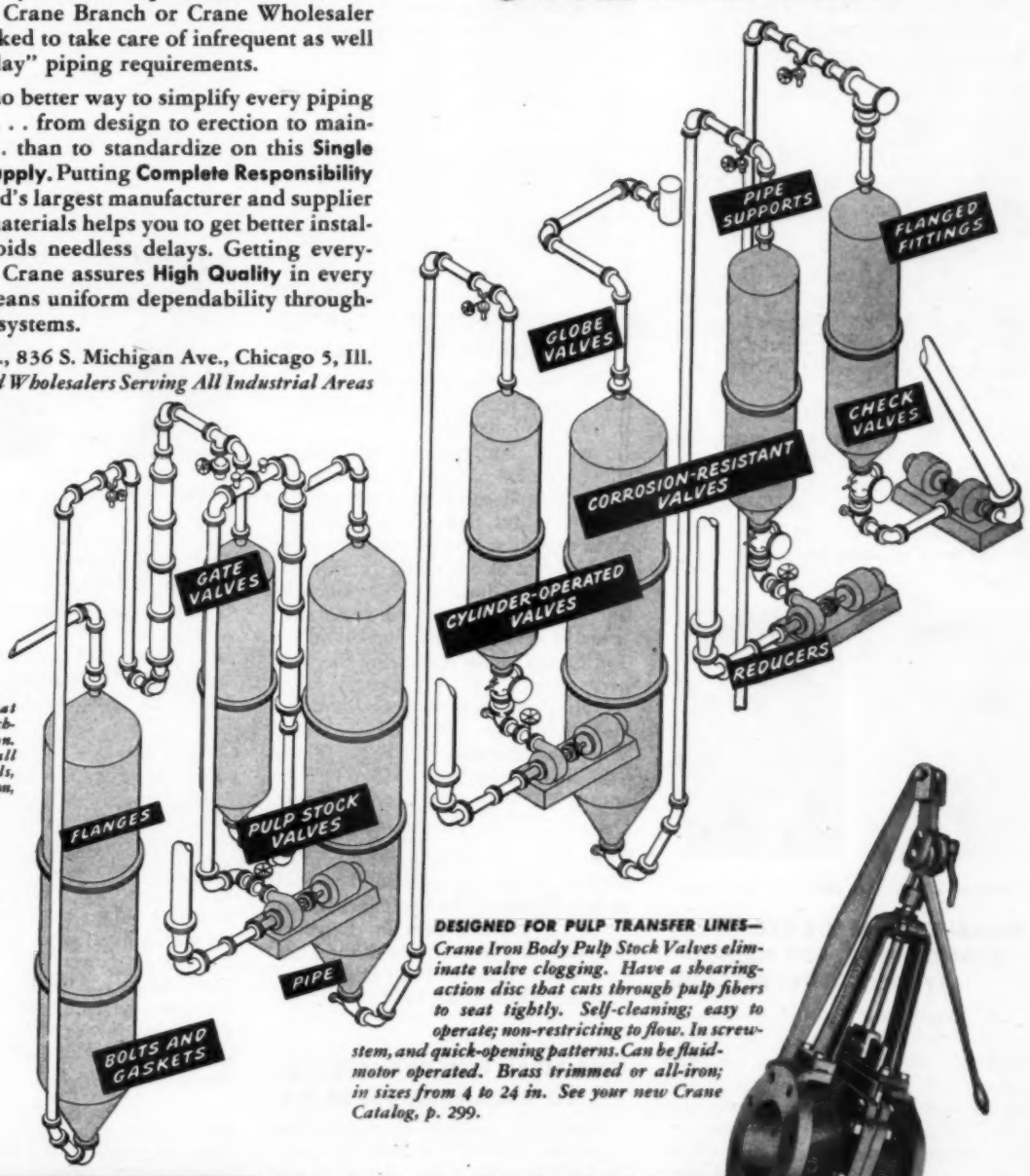
Complete selection . . . better piping . . . one order to CRANE

Take This Multi-Stage Bleaching System, for example. One order to Crane covers all valves, fittings, pipe, and accessories for this—or any other—pulp and paper mill installation. One order to Crane gives you more dependable service, too. Your local Crane Branch or Crane Wholesaler is well stocked to take care of infrequent as well as "every-day" piping requirements.

There's no better way to simplify every piping procedure . . . from design to erection to maintenance . . . than to standardize on this **Single Source of Supply.** Putting **Complete Responsibility** on the world's largest manufacturer and supplier of piping materials helps you to get better installations, avoids needless delays. Getting everything from Crane assures **High Quality** in every item . . . means uniform dependability throughout piping systems.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

ONE SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



Process piping at Multi-Stage Bleaching Installation. Crane supplies all piping materials, whether brass, iron, steel or alloys.

DESIGNED FOR PULP TRANSFER LINES— *Crane Iron Body Pulp Stock Valves eliminate valve clogging. Have a shearing-action disc that cuts through pulp fibers to seat tightly. Self-cleaning; easy to operate; non-restricting to flow. In screw-stem, and quick-opening patterns. Can be fluid-motor operated. Brass trimmed or all-iron; in sizes from 4 to 24 in. See your new Crane Catalog, p. 299.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

vention. For the past year, Mr. Harper has served as vice chairman of the Pulp and Paper Section of the National Safety Council.

At commencement ceremonies at Ohio State University, held midsummer of this year, the first advanced degree in safety engineering to be granted in the history of education in the United States was conferred upon Mr. Harper.

▼

WM. WEBSTER ELECTED TO VICE PRESIDENCY OF THE NATIONAL CONTAINER CORP.

At a luncheon given October 15 by National Container Corporation (Jacksonville, Florida) during the meeting of Southeastern Division of the Superintendents Association, Roanoke, Virginia, an official appointment was released.

R. H. Laftman announced that William T. Webster had been elected vice president of National Container Corporation of Delaware (the parent company), and had been appointed general manager of all operations of the company.

Following the announcement of his election, Mr. Webster announced that Aubrey T. Taylor had been made vice president of National Container Corporation of Virginia, and appointed plant manager of the Big Island plant in charge of all company operations in Virginia.

William T. Webster John M. Morehouse

MOREHOUSE MADE CENTRAL BRANCH MGR. FOR HARRIS-SEYBOLD—IN CLEVELAND

Appointment of John M. Morehouse as central branch manager of Harris-Seybold Company, Cleveland, has been announced. Mr. Morehouse will assume many of the duties of the late A. T. Walker, and will be responsible for company sales activities in Ohio, Michigan, West Virginia, Kentucky, eastern Indiana, and western Pennsylvania.

Before joining Harris-Seybold, Mr. Morehouse represented the Printing Machinery Company for 11 years in the same area he will now cover. He is, therefore, well known in midwestern graphic arts circles.

DR. L. P. MOORE HEADS THE AMERICAN CYANAMID'S NEW PRODUCTS DEV. DEPT.

Manager of the American Cyanamid Company's New Products Development Department is Dr. L. P. Moore, who has served as the company's European technical representative since 1946, and prior to that time in the Stamford Research Laboratories and later in the company's executive offices in New York. He had also been in charge of the New Products Development for the Celanese Corporation for two years.

Dr. Moore's new work will be devoted to the supervision of new products development and market research activities.

Dr. E. W. Cook, who has been assistant chemical director of the company since 1946, has received the appointment of European technical representative.

▼

DALHOUSIE YOUTH AWARDED MEMORIAL SCHOLARSHIP

The Tom Hickey Memorial Scholarship, valued at $600, has been awarded to David Gordon Mott.

Founded last year by W. Parker Hickey, senior partner of the firm of Hickey, Donaldson & Co., Montreal, in memory of his father, the conditions of the award are that the recipient must be a resident of one of the counties of Restigouche, Gloucester, Northumberland, or Kent; a son or the descendant of one of the woodsmen pioneers of the district and must enroll for the forestry course.

During his vacation periods, young Mott has been employed with the Woodland Division of the N. B. International Paper Company, Ltd., Dalhousie.

▼

▶▶▶ *J. R. Connell* has been appointed assistant purchasing agent of The Babcock & Wilcox Tube Company, Beaver Falls, Pa. He had been in charge of the purchasing department of the Tube Company's Welded Tube Division at Alliance, Ohio since 1942.

▼

TWO MEAD MEN TRANSFERRED TO ESCANABA PAPER CO.

From the position of construction superintendent of The Mead Corporation, Chillicothe, Ohio, James Lungo has been transferred to the Escanaba Paper Company, Escanaba, Michigan, a Mead subsidiary. He will be acting superintendent of maintenance at Escanaba, taking over the duties of Roy Dempsey, who retired recently.

Another newcomer with the Escanaba company is Ernest Saunders, former chemical engineer at Columbian Paper Company, Buena Vista, Virginia (also a Mead subsidiary). Mr. Saunders was formerly attached to the technical service staff at Brunswick, Georgia. He has been associated with Mead since graduating from Virginia Polytechnic Institute in 1947.

▼

▶▶▶ *Edwin C. Ware* has joined the Marathon Corporation, Menominee, Michigan, as plant engineer. Mr. Ware served as project engineer for the Rust Engineering Company, Pittsburgh, before coming to Marathon. Prior to that time he was affiliated with such companies as National Paper Products company, Socony-Vacuum Oil Company, and Sitroux, Inc.

Edwin C. Ware Lee Trenholm

▶▶▶ *Lee Trenholm,* public relations manager for Provincial Paper Limited, Toronto, and Canadian vice president of the Public Relations Society of America, was elected president of the Association of Canadian Advertisers during its 35th annual convention in the Royal York Hotel, Toronto, Ontario.

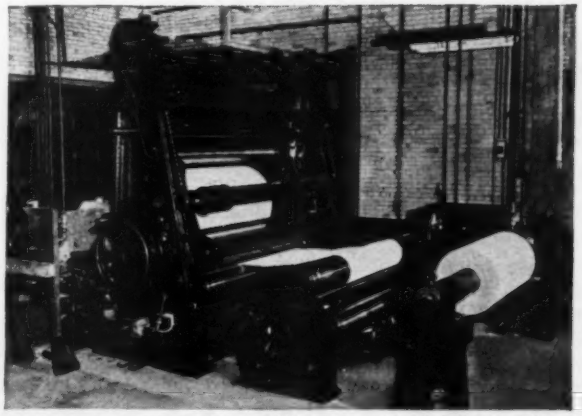
▼

▶▶▶ *Harry A. Erb* has rejoined the Elliott Company, Jeannette, Pennsylvania, as assistant to M. A. King, vice president in charge of engineering, with headquarters at the main plant. Mr. Erb first joined Elliott in 1928. He served as blower engineer, manager of the service department, and manager of the electric power department of Elliott's Ridgway Division. For the past six years, he had been steam turbine department service manager for Worthington Pump and Machinery Corporation.

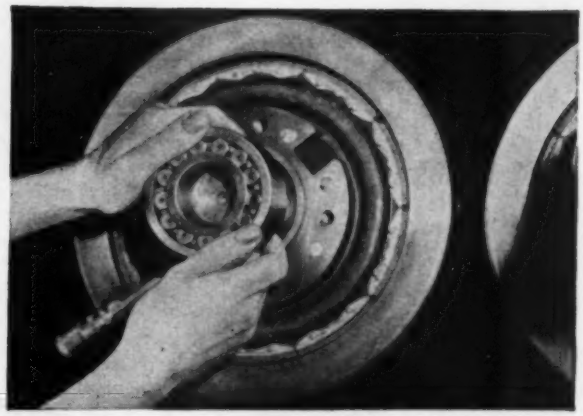
▼

▶▶▶ *Herman Koerwitz,* formerly plant engineer at the Marathon Corporation, Menominee, Michigan, recently joined the Chicago Cardboard Company, Chicago, in an engineering and administrative capacity. Mr. Koerwitz was with the engineering department of the Marathon Corporation in Menasha, Wisconsin, from 1936 to 1946, and then was transferred to the Company's Menominee plant.

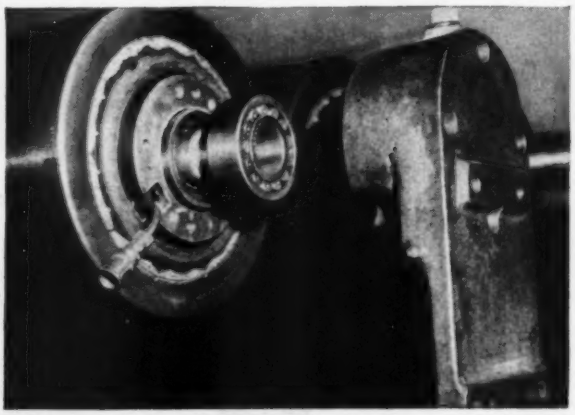
Torrington Spherical Roller Bearings maintain roll accuracy and alignment in CAMACHINE slitting and winding units



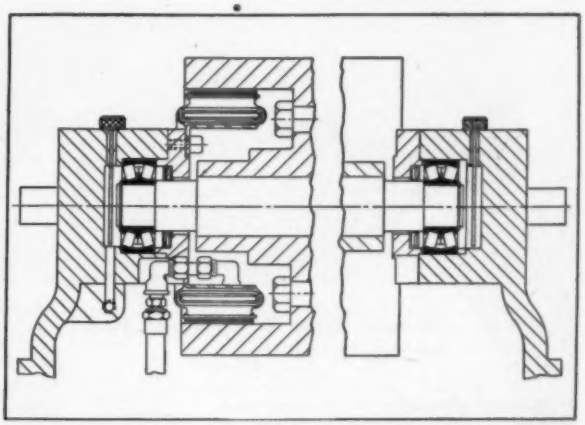
Modern paper converting machinery must be fed from uniform paper rolls. The Cameron Machine Company, Brooklyn, New York, has specialized for more than 43 years in the manufacture of slitting and winding machines, such as the Camachine 18 shown above, that will produce clean-edged, even wound rolls.



An important engineering feature of all Camachines, that assures even tension on the web and smooth, even winding, is the use of Torrington Spherical Roller Bearings on all through shafts. Despite center distances as high as 162", these self-aligning bearings make it easy to secure accurate alignment of shafts.



On idler rolls, above, Spherical Roller Bearings turn freely, with minimum friction, under the weight of heavy paper reels. They compensate automatically for deflection. Since the bearings cannot bind or drag, they provide insurance against a torn or twisted web, and reduce power requirements to a minimum.



Cross-section of an idler roll shows the application of two of ten Spherical Roller Bearings used in the Camachine 18. The angular location of the rollers with reference to the bearing axis provides thrust capacity and eliminates end play, another important feature in producing even paper rolls.

Wherever shaft deflection or misalignment is a problem in heavy-duty equipment, the free-rolling self-alignment of Torrington Spherical Roller Bearings assures long service life with minimum maintenance. Let our engineers help you with specific design problems. THE TORRINGTON COMPANY, South Bend 21, Ind., or Torrington, Conn. District offices and distributors in principal cities of United States and Canada.

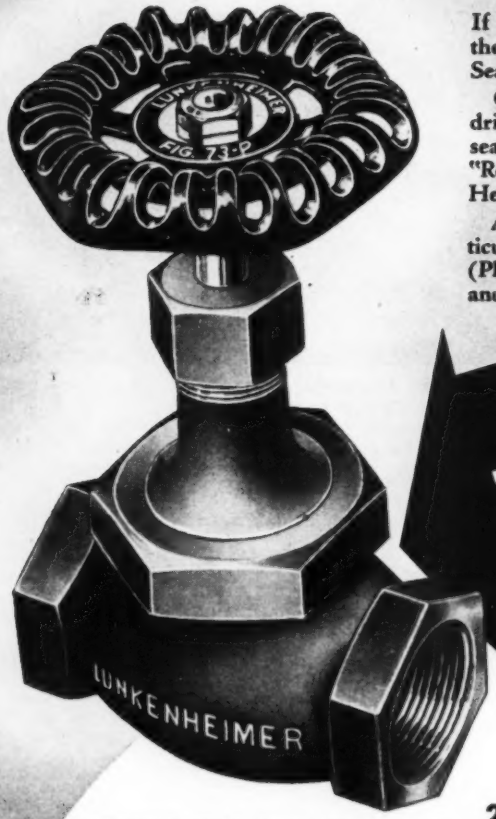
TORRINGTON SPHERICAL ROLLER **BEARINGS**

Spherical Roller • Tapered Roller • Straight Roller

Needle • Ball • Needle Rollers

Here's a Tip...

FOR SELECTING THE *RIGHT VALVE* FOR THE *RIGHT PLACE!*



"Renewo" Globe Valve Regular Type, "P" Type or "PS" Type

If you just want an extra good valve for general service, then choose the "Renewo" with Regular Type Nickel Alloy Seat and Disc. It's tops in its class.

Or, perhaps you have a throttling condition such as drain, drip, water column blow-down and like service where regular seats and discs tend to cut out . . . use the "P" (Plug Type) "Renewo" with 330 Brinell "NS 5" Alloy Seat and Disc. Here you have high resistance to wear and corrosion.

And for severe close throttling and erosive service, particularly where abrasive conditions are present . . . the "PS" (Plug Type) "Renewo" with 500 Brinell Stainless Steel Seat and Disc will solve the problem.

LUNKENHEIMER "RENEWO" VALVE *Threesome*

1. REGULAR TYPE *"Renewo"* Nickel Alloy Seat and Disc for general service.

2. "P" (PLUGTYPE) *"Renewo"* "NS5" Nickel Alloy 330 Brinell Seat and Disc for throttling, drain, drip, water column blow-down and like service.

3. "PS" (PLUG TYPE) *"Renewo"* Stainless Steel 500 Brinell Seat and Disc for close throttling and other severe erosive service.

and look at these money saving extra features

1. Each type of seat and disc is interchangeable one with another, making it possible to convert a regular type valve into a plug type without taking the valve out of the line.

2. Available in 200 lb. S.P. as well as 300 lb. S.P. making it unnecessary to purchase a 300 lb. valve for 200 lb. service.

The "Renewo" Threesome is fully described in Circular No. 577. A copy is yours for the asking . . . from your Lunkenheimer Distributor or direct from us.

ESTABLISHED 1862

THE LUNKENHEIMER CO.

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Allied . . .

"Creative Selling" Theme of Michigan Alkali Div. Conference

Sales meeting of the Michigan Alkali Division, Wyandotte Chemicals Corporation was held at St. Clair, Michigan the week of October 3. In addressing the meeting, Bert Cremers, vice president of the Division, told the district managers and salesmen attending the conference that "the reason I have selected creative selling as our theme, is that I agree with many of our business leaders who say that there is nothing wrong with American business today that good, sound selling can't cure. America needs, more than anything else, trained salesmen to keep products moving from plants to users."

IN RECOGNITION OF his 25 years of service to the company, M. J. Conway (right), Michigan Alkali Division Pittsburgh Office Manager, Wyandotte Chemicals Corp., receives gold watch from Bert Cremers, the Division's vice president. Presentation was made October 20 at a special banquet in Wyandotte, Mich.

Each section of the conference was preceded by a summary of conditions affecting the particular industry discussed. Paul Weller, director of market research said "There is every indication that the recent recession is at an end. Businesses of all types have found that they had let their inventories go below a safe minimum."

Dr. Paul Burchfield, assistant director of technical service, detailed some of the routine customer requests made of his department. Suggestions by Wyandotte representatives to a soda ash user resulted in a 20 per cent production increase, while periodic inspections of chlorine installations have forestalled possible accidents.

Robert B. Semple, president of Wyandotte Chemicals Corporation, was the featured speaker at the closing banquet. Mr. Semple pointed out that in view of the completion of Wyandotte's postwar expansion program, the corporation is now in position to satisfy the increasing demands for quality chemicals in quantity. In this regard, Wyandotte's new president also commented on the importance of the company's entry into the organic chemicals field, which now puts the corporation in a much sounder position than ever to supply requirements that are developed from new advances in industrial chemistry.

In attendance at Wyandotte's Michigan Alkali Division Sales Conference were: FIRST ROW (L to R)—G. M. Dunning, Director of eastern sales; W. L. Settlemire, calcium chloride; M. A. Thompson, manager, Chicago office; P. F. Wagner, sales; J. C. Mills, Chicago; R. K. Rigger, acting manager export dept.; Bert Cremers, vice-president, Michigan Alkali Division . . . SECOND ROW—J. E. Dale, New York; S. B. Scott, manager, New York office; C. J. Farcasin, Cincinnati; T. C. Simpson, Chicago; M. E. Clark, sales manager, soda ash, caustic bicarb; R. L. Fosburg, calcium chloride; J. H. Bahlburg, Jr., New York; V. H. Vodra, assistant sales manager, calcium carbonate . . . THIRD ROW—R. D. Weed, Cincinnati; R. W. Moister, New York; T. R. Boyle, manager, sales records; E. Heiser, manager, Cincinnati office; L. C. Reid, assistant sales manager, organic chemicals; R. W. Hagemeyer, sales; C. J. Diehl, technical service; H. C. Brunner, manager, Detroit office; W. S. Nevius, director, traffic . . . LAST TWO ROWS—P. G. Fuger, manager, St. Louis office; R. Raine, director, advertising; H. S. Shultz, technical service; C. S. Johnson, director, technical service; R. C. Leonard, Detroit; P. M. Bigley, assistant to vice-president, Michigan Alkali Division; F. R. Sproule, assistant sales manager, calcium chloride and public business; F. W. Sweany, calcium chloride, P. E. Burchfield, assistant director, technical service; L. D. Dodson, manager, calcium chloride and public business; P. L. Weller, director, market research; J. A. Sheehan, Chicago; L. B. Hawkins, St. Louis; H. F. Roderick, manager, calcium carbonate, chlorine, organic chemicals.

Patterson (Canada) Opens New Plant

A new plant has just been opened at Toronto, Canada, by The Patterson Foundry & Machine Company, Ltd.

Embodying all the principles of modern plant design, the new plant has a floor area of 25,000 sq ft, and is fully equipped to manufacture the company's complete line of industrial processing machinery and equipment.

In addition to complete manufacturing facilities, the new plant also will

Canadian subsidiary of The Patterson Foundry & Machine Co., East Liverpool, Ohio, has just opened this new plant

maintain a process engineering division for the design of complete or partial process systems. This division will handle engineering, construction, installation and initial operation of process systems, and will assist the research staffs of operating companies in the development of various processes.

Some of the standard machinery and equipment to be manufactured at the new plant will be grinding, classifying, mixing and screening, and synthesizing, fermentation, gas absorption, hydrogenation, thermal reaction and other processing equipment.

The Canadian company is a subsidiary of The Patterson Foundry & Machine Company, East Liverpool, Ohio.

PAPER & TWINE MEN GUESTS OF PAPER MILL MEN'S CLUB

More than 400 members of the Southern California Wholesale Paper and Twine Industry were entertained at the 15th Annual Hi-Jinks of the Paper Mill Men's Club of Southern California, at the Oakmont Country Club in Glendale, California, September 30.

The day was filled with sports events —golf and other games. Dinner in the evening, followed by a floor show, climaxed the entertainment. During the dinner, Hi-Jinks General Chairman, C. J. Warren, of the Paper Container Manufacturing Corporation, and the Club President, Jack Leiser, of Pioneer Wrapper Company, entertained the guests with informal talks. Response on the part of the jobbers was made by A. C. Ames, of S. E. Rykoff Company, Los Angeles.

Current officers of the Paper Mill Men's Club are: President—Jack Leiser, Pioneer Wrapper Co.; vice president—Irving E. Damon, Northern Paper Mills; Secretary—Roland Wolf, Graham Paper Company; and treasurer—L. A. Gardiner, Nekoosa-Edwards Paper Company.

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INSTRUMENTATION COURSE WILL AGAIN BE OFFERED BY FISCHER & PORTER CO.

The next instrumentation course offered by the Fischer & Porter Company, Hatboro, Pennslyvania, will be held at the company's plant in Hatboro, January 23 through 27, 1950.

This course will cover manufacture, calibration, installation, operation and maintenance of primary and secondary process control instruments. Users of the company's line of Flowrator instruments will find the course particularly valuable. The company will gladly furnish further details.

Ville LaSalle Plant Formally Opened by Ross Engineering

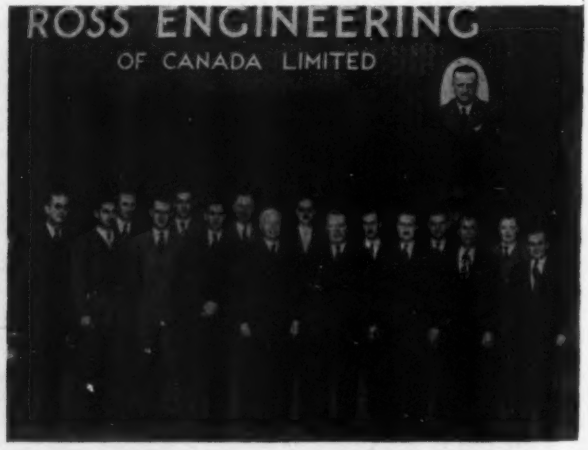
▶▶▶ MORE THAN 100 Canadian industrial and civic leaders attended the formal opening on October 7 of the new Ville LaSalle plant and office buildings recently completed by Ross Engineering of Canada, Ltd. This new plant has been hailed as one of the finest and most modern manufacturing establishments in Canada.

The new plant, office and storage buildings were built at a cost of more than $600,000. Of steel and brick construction, the plant embodies every advanced technique in plant design and layout. Among its outstanding features is a central air-conditioning system for offices and drafting rooms; the extensive use of windows in walls and roofs to provide ideal daylight working conditions; inside loading and unloading platforms; an inside garage; and modern cafeteria.

An impressive feature of the celebration was the formal laying of the cornerstone by Mrs. J. O. Ross, wife of the founder of the business. Following a luncheon served at the plant, guests were taken on an inspection tour of the building by S. McEachern, plant superintendent.

Ross Engineering of Canada, Ltd., was organized in 1923 and for the past quarter century the business has grown steadily both in the volume of equipment being installed and in the number of industries being served. For a number of years the company's activities were confined largely to the pulp and paper industry with the result that today the majority of Canadian pulp and paper mills are equipped with at least one or more types of Ross Air Systems. However, during the past decade, the rapid growth of Canadian industry engaged in the manufacture of other types of products has greatly increased the field for air processing systems.

Although Ross Engineering of Canada, Ltd., is a Canadian corporation with its own engineering and manufacturing facilities, it has access to all information, research and developments of J. O. Ross Engineering Corporation in the States and Carrier-Ross Engineering Company, Ltd. in England, which companies serve in the same capacities in the countries mentioned.



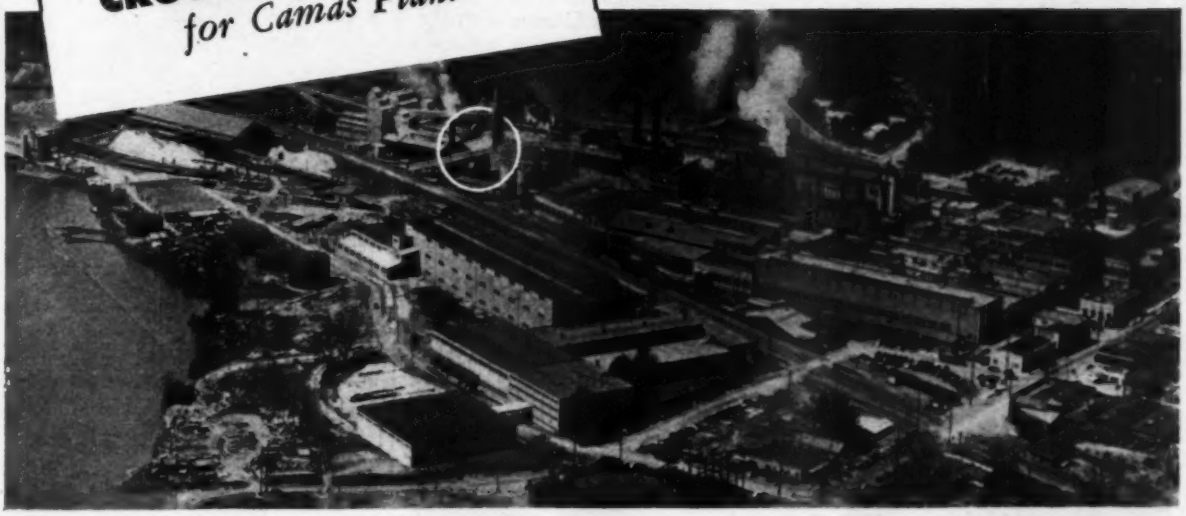
Group of guests at laying of cornerstone at new plant of Ross Engineering of Canada at Ville LaSalle
At right are executives of Ross at opening of new plant. L to R: W. B. Andrews, R. D. Willis, S. M. McEachern, G. R. Stephens, J. L. Bryant, J. F. Forsyth, S. W. Fletcher, J. O. Ross, G. W. Lee, R. J. Griffin, G. R. MacLeod, A. G. Marshall, E. G. Wakeling, O. Belleview, D. J. Goodyear, R. W. Grott. (Inset) F. W. Hooper, general manager

Western Precipitation COTTRELL

again selected by

CROWN-ZELLERBACH

for Camas Plant



New Camas recovery unit one of many successful Western Precipitation paper installations...

WESTERN PRECIPITATION is the organization that—more than 30 years ago—pioneered the first successful application of COTTRELL equipment for collecting soda ash from the recovery furnaces in paper plant operations. And through the years Western Precipitation has continued its leadership in COTTRELL installations with one important development after another.

One of the latest Western Precipitation paper installations is the COTTRELL unit recently completed for Crown-Zellerbach for their kraft plant at Camas. This COTTRELL, recovering soda salts from the black liquor furnace gases, is only one of the Western Precipitation COTTRELL units chosen by Crown-Zellerbach for their paper mills.

In fact, at the Camas plant itself another Western Precipitation COTTRELL unit has been in successful operation for some 8 years, and the success of this installation was an important factor in the decision of Crown-Zellerbach to again install a Western Precipitation COTTRELL in the newly completed expansion to their Camas kraft mill operations.

Throughout the paper industry many other companies have also selected Western Precipitation COTTRELL equipment for their kraft mill recovery units, and the invaluable experience gained through the years by the Western Precipitation organization in this specialized field can be helpful to any paper plant contemplating installation of recovery equipment. Let our engineers study your particular requirements and make recommendations based on over 30 years of first-hand experience in the paper industry—more than 40 years in the design and construction of COTTRELL equipment for all types of industrial applications.

Send for descriptive literature on COTTRELL *equipment*

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1037 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

Necrology

C. STEWART LEE

Director and retired vice president of The Pusey and Jones Corporation, Wilmington, Delaware, C. Stewart Lee passed away October 4 in Wilmington at the age of 76.

Mr. Lee retired in January, 1948, after 40 years of service with Pusey-jones. His connection with the firm was retained, however, through his remaining a member of the board of directors. He began his career in the company's sales department in 1907, and was general manager of the company during World War I. He was made vice president in 1924.

C. Stewart Lee

In his 40 years affiliation with the Pusey and Jones Corporation, active in the manufacture and sale of papermaking machinery, Mr. Lee visited virtually every important paper mill in the United States and Canada. In this capacity, he also traveled extensively in South America, England, western Europe, and Russia.

Surviving are the widow and two sons—C. Stewart Lee, Jr., of Wilmington; and Louis O'D Lee, of New York City.

▼

WILFRED L. FORSYTHE

Former president of the Victoria Paper Mill Company, Fulton, New York, Wilfred L. Forsythe passed away October 5 in Ithaca, New York, after a long illness.

After his retirement from the Victoria Mills some years ago, Mr. Forsythe became interested in the Kelly-Forsythe Corporation which operates paper mills at Ithaca and Port Leyden, New York.

The widow, a son and a daughter survive.

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▶▶▶ *Henry P. Madsen,* president of the Appleton Machine Company, Appleton, Wisconsin, passed away October 13, 1949.

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▶▶▶ *Frederick P. Brockway,* former superintendent of the Island Paper Mill, Carthage, New York, passed away October 5 in Carthage at the age of 59. The mill is no longer in operation.

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FREDERIC A. SABBATON

President of the Dryden Paper Company, Dryden, Ontario, Frederic Augustus Sabbaton passed away October 12 at his home in Grand Mere, Quebec. He was 78 years of age.

Born in Troy, New York, Mr. Sabbaton located in Canada in 1902 as assistant manager of Laurentide Paper Company. He was vice president of that company until it was absorbed by Canada Power & Paper Corporation, which later became Consolidated Paper Company.

Mr. Sabbaton was one of the pioneers of the pulp and paper industry in Canada. He introduced scientific management and brought about many developments in the manufacture of paper.

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▶▶▶ *Paul A. Burke,* for the past four years manager of the Thompson Paper Mills, Thomson, New York, Paul A. Burke passed away suddenly September 18. He was 50 years of age. His widow and a daughter survive.

Don't wrestle with your Felt problems.
Use *DRAPER FELTS.*

The DRAPER Felt

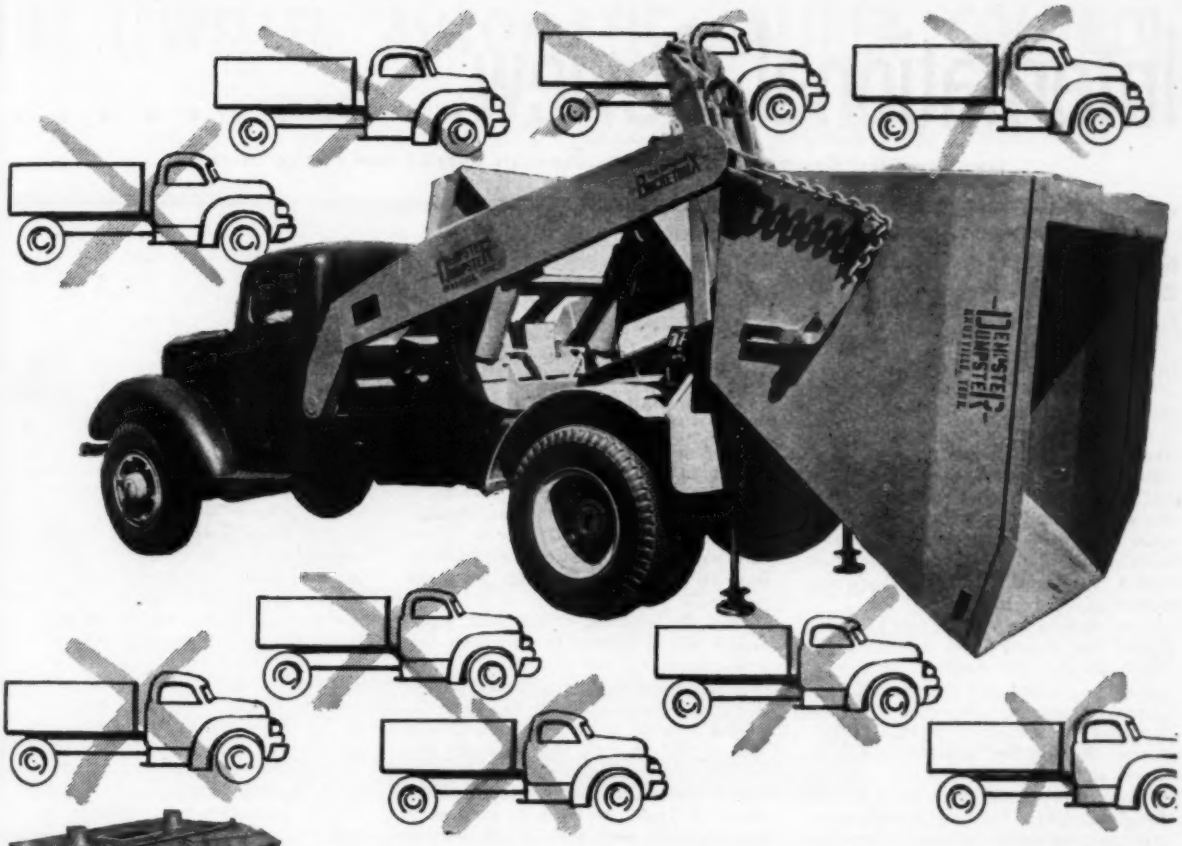
DRAPER BROTHERS COMPANY

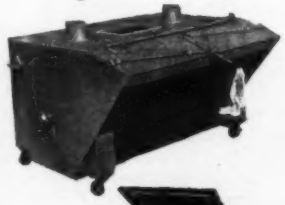
Woolen Manufacturers Since 1856

CANTON, MASSACHUSETTS

RALPH E. BRIGGS, *Sales Manager*

● BRADFORD WEST, *Pittsfield, Mass.* ● WILLIAM N. CONNOR, *Jr., Canton, Mass.* ● L. H. BREYFOGLE, *Kalamazoo, Mich.* ●
● WALTER A. SALMONSON, *2514 Northeast 59th Ave., Portland, Oregon* ● L. L. GRIFFITHS, *Jr., Kalamazoo, Mich.* ●
● HAROLD H. FISH, *Syracuse, N. Y.* ●





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International Review.....

News from Other Countries . . Technical Developments Adapted from Foreign Literature

Egyptians Find U. S. Cigarette Paper is Cheaper than Others

Egypt's twelve important cigarette manufacturers consume about 2,000,000 pounds of cigarette paper annually, valued at approximately $1,000,000. Before the war, Egypt obtained all of its cigarette paper from Europe, but during the war when this source was cut off, the United States was practically the only supplier. After the war, when European cigarette paper again became available, the United States was virtually eliminated from the Egyptian market. France and Italy supplied the major part of such imports in 1948.

Local manufacturers in the past had complained that United States cigarette paper was thicker than that obtained from Europe, and not as suitable in the manufacture of oriental-type cigarettes. However, new types of United States cigarette paper have been shown to Egyptian cigarette producers which, according to reports, are equal to or better than the European product. Although Egyptian cigarette manufacturers have requested dollar exchange to buy substantial amounts of the new paper, the exchange has not been made available to date (August). At the official rate of exchange (August, 1949), a well-known brand of United States cigarette paper is reported to be from 15 to 20 per cent cheaper than European paper, and in the case of first-quality Italian paper, as much as 30 per cent cheaper.

With the thinner types of paper now available from the United States, Egypt potentially may be an important market in the Middle East, once the problem of dollar availability is solved. (From *Foreign Commerce Weekly*)

▼

Selective Cutting Is Practiced in Puerto Rico

The success and usefulness of the selective method of cutting in tropical forests has been amply demonstrated by a small 20-hectare (50-acre) forest located in the interior of Puerto Rico in the midst of denuded hillsides on which tobacco is grown. When this forest was purchased as part of a farm in 1926, it was as degraded as all the other forests of this overpopulated island. Since that time it has been treated by a jardinage type of forestry based on a common-sense approach, the owner having no specialized knowledge of silviculture but rather depending on his own experience. The area has reacted remarkably to this wise handling, which even included an accurate inventory of the more valuable tree species.

The owner believes that his forest is the most productive part of his farm. Up to 1940, it brought him an average of $1,000 per year, and from 1940 to 1944 this figure rose to $1,500, more than half of which is clear profit. This example deserves to be called to the attention of all countries of tropical America.—*Unasylva*, July-August, 1949, issue.

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British Paper Notes

September 1949

▶▶▶ Almost the final act (at least it is hoped) in the de-control of the British Paper Trade has just been announced to take effect from April 1, next. At that date, the government will cease to be the bulk purchasers of the chief papermaking materials: wood pulp, esparto grass and pulpwood.

From the beginning of next year, papermakers will be allowed to make their own arrangements for the purchasing of these materials and deliveries can be effected from April 1. The quantity of materials will still be governed by currency considerations and at the same time each purchaser will be under an obligation to accept a proportion of the stocks of materials held by the Board of Trade. As the price of these to the makers are above world prices, the prospects of any serious saving in the purchase of materials, combining Board of Trade with outside purchases, is not promising.

At the moment, however, it is anticipated that a further reduction in prices will be announced shortly. Whether this will have any effect on current trading is questionable for with the first month of autumn passed, usually a busy month, there are no signs of a revival, in fact trading generally is extremely quiet. As Sir Stafford Cripps has announced that home purchasing of all articles is again to be curtailed, any expansion in paper trading certainly will not operate until present accumulated stocks are much further depleted.

Production of paper during the second quarter of this year was nearly equal to the previous quarter; i.e., approximately 80 per cent of prewar and production of boards was well beyond 100 per cent. Nevertheless, certain sections of the Trade are still being severely hit, for yet another mill belonging to the Wiggins, Teape Group, the Basted Paper Mills at Borough Green near Sevenoaks, has been closed. This old established mill, maker of fine papers, has suffered from a lack of orders, high costs of production, curtailment of export orders, and the various Paper Control restrictions which have resulted in a smaller use of paper. The plant and machinery of this mill is to be shipped to South Africa and erected at Johannesburg, and employees have been given the opportunity to go with this mill if they so desire.

As a compensation for these mill closures, the Chartham mill, near Canterbury (also belonging to the Wiggins, Teape Group), hitherto maker of tub-sized and other high grade papers has been re-designed and re-opened for the specific purpose of manufacturing Natural Tracing Paper. For several years before the war, the Group experimented in the making of tracing paper as most of these papers were then imported. When war came, the initial knowledge thus gained was of considerable service to the country and all war demands for this type of paper, which were naturally very heavy, were met by this mill. During the war, it was decided to develop the Chartham mill for the purpose of producing these papers to meet peace time needs and thus obviate importation. To this end, special machinery has been erected which will produce tracing and similar papers and it is anticipated that such production will be equal if not in advance of such papers manufactured in any other part of the world.

As we are writing these notes news has been received that newsprint prices are to be reduced by £4-5-0 ton and reductions in the prices of other papers are promised. It is suggested that government margin of profit on mechanical pulp is £5-8-6 ton and sulphite pulp £11-10-0 ton giving an estimated equivalent on newsprint of £7-£8 ton. It will be seen, therefore, that the government profit margin has been substantially reduced. It is also anticipated that permission will be granted to the home mills to increase the present 55 per cent production, possibly to 67 per cent, at the beginning of the next license period (November). The position regarding Canadian purchases of newsprint for 1950 are at present obscure, as devaluation of the pound has raised North American prices to £43 per ton, but the balance of deliveries for the present year are not affected as payment has already been made. Concurrently, the position has been reached among many of smaller British newspapers where they are not consuming their permitted quota owing to decline in advertising and the high price of newsprint. This, and other factors, create the speculation of higher paper supplies for the national newspapers enabling them to print beyond the present restricted six page dailies. Supplies of newsprint from Scandinavia while not affected by devaluation (as these countries have come into line) appear to be promising for 1950, 100,000 tons having already been reserved.

Confirmation of the possible increase in permitted production is found in the announcement that Bowaters is arranging to start up once again the huge newsprint machine at Kemsley. This machine can produce 1,000 tons per week and it reported that large orders for export to the commonwealth countries are in hand.

Up to the present this year increased imports of newsprint are running practically level with the additional exports of this paper. Imports for the first nine months of 1949 total 109,330 tons, an advance of

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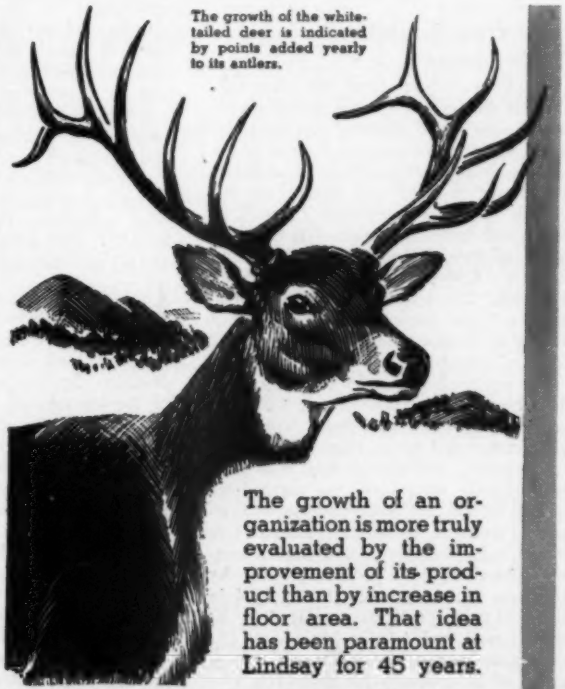

The growth of the white-tailed deer is indicated by points added yearly to its antlers.

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approximately 28,000 tons on last year while exports of newsprint total 39,188 tons against 4,351 tons during January-September 1948.

Board of Trade Returns disclose that imports of materials for January-September this year were 1,178,840 tons, a little short of 150,000 tons up on last year. These additional materials coupled with plentiful supplies of waste paper and the increased use of straw must bring total materials available nearly up to prewar. Imports of paper and boards are down on 1948 by nearly 40,000 tons with a total of 281,069 tons but exports are up to 123,469 tons, an increase over last year of 40,650 tons. Incidentally, the U.S.A. with 24,059 tons has taken 19,235 tons extra.

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Bond Paper from Bagasse Made by New Mill in the Philippines

A recently completed mill in Bias, Negros Occidental, Republic of the Philippines, has commenced production of medium- and low-grade bond paper. This mill has an inexpensive and readily available supply of pulp from bagasse as it is situated in the heart of a sugar-producing area. The company's product is expected to offer serious competition to United States bond paper.

A government-owned paper mill near Manilla was opened but had not begun production in August. The plant was built to produce kraft wrapping paper for making cement bags. However, according to competent sources, the cost of obtaining domestic wood pulp would be prohibitive, and because of the high cost of imported wood pulp, it is believed doubtful that such products could compete with imports from the United States.

The Philippine market was reported in August to be overstocked in some classes of papers. There were sufficient stocks on hand of all grades to meet demands. Selling prices of paper and products had been declining and had reached what the trade considered a normal level. Demand was reported to have leveled off and was expected to remain more or less constant. (From *Foreign Commerce Weekly)*

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▶▶▶ FOUR FOREST research institutes came into being in 1948 in the several federated republics of Yugoslavia, with headquarters in Belgrade, Zagreb, Ljubljana, and Skoplje. They are under the direction of the forest departments of the respective republics. In addition, there is an All-Union institute, with headquarters in Splitu, devoted to the development of improved methods of forestry on rocky soils. — *Unasylva,* July-August, 1949, issue.

Foreign Abstracts . . . . . .

Yeast from Sulphite Waste Liquor

The article, while almost five years old, is useful because it includes a well documented review of the extensive program for developing new fast-growing proteins under the ambitious German "Four Year Plan" carried out by Fink and Lechner at the Institute of the Fermentation Industry in Berlin, and by research workers at the I. G. Farbenindustrie, Zellstoffabrik Waldhof and the Phrix Corp., as well as the Svenska Jästfabrik. The use of various forms of sulphite waste liquor (and other cheap sources of carbohydrates) led to a successful development.

The article also takes up comparisons of yeast grown on beechwood sulphite waste liquor and on wood sugar hydrolyzates with other commercial yeasts (e.g. brewer's and baker's yeasts) and with proteins from beef, fish and milk. In general, the yeasts from various sources, are quite uniform with regard to moisture, protein, fat, nitrogen-free extract, ash, phosphorus, and sulphur contents. Based on crude protein, 1 kg of dry yeast was found equivalent to 2.5 kg lean beef, 2.17 kg peas (as meal), 2.38 kg herring meal, and 4.16 kg hen's eggs. The yeast protein contains all essential alpha-amino acids. Evidently the amino-acid content of yeasts from different sources vary somewhat. The purine nitrogen of yeasts gave some concern at first but there is general agreement that 10-20 g dry yeast can be metabolized safely and effectively by human beings.

In general, the yeasts form an excellent source of vitamin B Complex, and may also contain appreciable amounts of vitamin C and E, as well as ergosterol. Pigs and ruminants utilize the yeast organic matter satisfactorily. The general conclusions are that the yeasts are useful food and feedstuffs and that yeasts grown on sulphite waste liquors are equal to yeasts grown on other substrates. Forty-six references. G. Butschek. *Chem.-Ztg.* 68, No. 12, 230-3 (1944) (In German).

Rapid Tall Oil Analysis

The neutral components of tall oil could be determined rapidly and with adequate precision, by passing an ethereal solution of the oil through a column of alumina, and then eluting with small portions of ether, evaporating this solution and weighing the residue. The acids in tall oil are almost quantitatively retained by the column, although saponifiable "neutrals" are also eluted by the ether. Results obtained with a crude oil, a distilled oil and a forerun of the tall oil (containing over 30% neutral substances) compared reasonably well with neutrals on these same samples determined by the usual analytical procedures. The relatively simple equipment used is illustrated and the technique is described in detail. Duplicate determinations can be made within about two hours. Whereas petroleum ether may replace ethyl ether, the results are lower and less accurate because the petroleum ether fails to remove from aluminum oxide one of the sterols found in tall oil. Comparative tabulated data are given and refinements of the method are discussed. Work on chromatographic tall oil analysis being continued. Waldemar Jensen *Finnish Paper and Timber J.* 31, No. 12, 225-7 (1949). (In English).

Plastic Lignin

For a number of years lignin base plastics have been manufactured in Venice in two industrial plants (apparently the only ones of their kind in Europe). Operations depend upon preliminary pilot plant studies made by Meneghini and Sorgato at the University of Padua where a high grade thermoplastic, readily dispersed alkali lignin was prepared. The steps although outlined are not given in any detail. Under pressure the lignin melts at 150-170 C. (depending on its moisture content). The author claims that in his processing (published elsewhere), aliphatic hydroxyl groups are in part eliminated and phenolic groups are enhanced. Unless treated further this lignin serves largely for laminating purposes. Up to 35-45 per cent lignin may be used with (oil treated) unbleached pulps and, by heating under pressure, slabs can be made, the physical properties of which resemble those obtained from phenolic resins.

Attempts to render lignin thermostable by introducing phenol followed by formaldehyde were unsuccessful. On the other hand alkali lignin can be hardened ("polymerized") by means of formaldehyde, especially by condensing colloidally dispersed lignin under slight pressure in an autoclave with formalin. The resultant "formo-lignin" is obtained as a soft friable mass which can be calendered but to which small amounts (2-3 per cent or more) of a suitable resin must be added to give the proper degree of plasticity. The modified formolignin can then be mixed with wood meal (so that the mixture contains about 40 per cent lignin and a fairly high moisture content (20-25 per cent) prior to molding.

Properties of the resultant product are compared with those of products in which phenolic resins were used. In general these were found to be favorable although dielectric properties were inferior. Cost figures are distinctly advantageous. Furfural lignin polymerization products may also be prepared having unusual properties, and under certain conditions (due to concomitant polymerization of the furfural) leading to autoresinfication. Molding powders containing furfural-lignin have good dielectric properties. Eleven references. Hippolyte Sorgato. *Chimie et Industrie* 61, No. 4, 345-48 (In French).

Drying and Ventilation—their Applications to Machine Operation and Construction

A considerable part of the total cost of paper manufacture is represented by the cost of drying. The percentage of the construction cost of the dryer part of two typical paper machines was 71.5 per cent (in a high speed newsprint fourdrinier) and 52 per cent (in the case of a Yankee machine with a 5 meter cylinder diameter). In order to keep the dryer section cost within reasonable limits, continuous efforts have been

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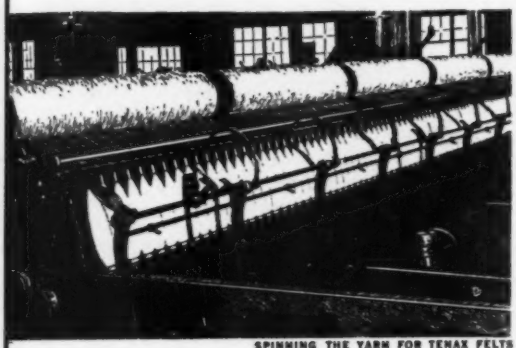

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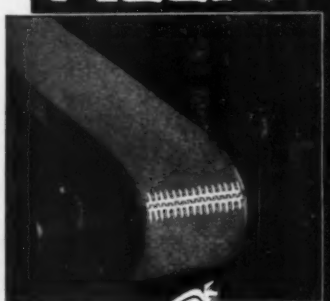

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made to improve drying efficiency per surface unit, but the present system of drying by evaporation, based on heat convection, has its limitations with regard to dryer efficiency and heat consumption beyond which progress cannot be made. In paper machines, removal of evaporated water is essential and drying and ventilating equipment are generally considered within a single unit.

Such installations require extreme care and accuracy in planning and in operation. In the present article, the physical laws of thermal drying, their application to various pulp and paper dryers (with and without felts and hood) are discussed. The results of the operation of three Yankee machines, the essentials of paper machine ventilation and a brief general discussion regarding possible further developments; including improvements in heat exchange and in evaporation; feltless drying whenever possible; completely enclosed papermachines; subdivision of the dryer portion into several enclosed units; completely air-conditioned machine rooms; and additional heaters installed in the dryer section, with energy supplied by dielectric heating of infrared radiation.

The author gives numerous calculations. 29 illustrations, 5 tables and 28 references. Karl Schmidt. *Das Papier* 3, 73-82; 118-31; 159-69 (1949). (In German.)

The Characterization of the State of Beating of Pulps

The usual method for evaluating the strength properties of a pulp involves the determination of its strength at a certain degree of beating or freeness. This procedure does not give a true characterization, since it is incorrect to consider one pulp inferior in strength to another because it requires a different degree of beating to attain the identical strength. The various methods used for evaluating the beating effect are reviewed briefly, including water absorption, water retention, surface area of fibers, drainage time, porosity, and apparent density. All are unsatisfactory.

The author introduces a new criterion for pulp evaluation as follows: For example, a point is chosen on the curve for tensile strength *vs.* time of beating for a given pulp. At this point a relationship is developed known as *"omega B."* First the slope of the curve at this point is determined. Then the slope of the line connecting this point to the origin of the axes is determined. The quantity omega B = 100 [1—(the slope of the curve at this point ÷ the slope of the line from the point of the origin)]. The value for this expression is 100 at the point where the curve passes through a maximum. It has been found convenient to compare the various properties of a given pulp with those of another pulp at the beating times corresponding to omega B = 80 for both pulps.

The reliability of the results which are obtained with different pulp samples is compared when using degrees S.-R. (50), porosity (Bekk-Ullstein number of 200 seconds), apparent density (0.800), and omega B of the breaking length curve (80). The omega B analysis is found to have definite advantages over the other methods and no special instruments or additional testing procedures are required. The results of a pulp evaluation on the basis of "omega B" do not depend upon its drainage properties; these can be measured separately. In the author's opinion, the best characterization of a pulp is obtained when the two different values are taken into account—properties at S.-R. 50 and properties at omega B = 80. 19 footnotes, 36 tables and 24 diagrams are given. Albert Bachman. *Finnish Paper Timber J.* 28, No. 7A, 35 (1946). (Original in Swedish with English summary) through B.I.P.C. 20, 32 (1949).

"Handmade Board"

The general means of controlling machine operation and factors influencing the production of so-called handmade board are discussed. The board is made on a one-vat machine and taken off by hand, and in which as many as 20 plies can be couched together. The composition, type and hydration of stock, thickness of individual plies and their number, thickness of the couched board, pressure at the forming roll, temperature and consistency of the stock suspension and machine operating data are all considered.

The author also emphasizes the influence of dimensional changes occurring during manufacture on the size on the finished sheet. Mathematical expressions are given for the relationship between the wet weight of the ply after being taken off the forming roll, the area of the wet board, the percentage of dimensional change, the thickness and density of the air-dried board, the dry content of the air-dried board, and that being taken off the forming roll, and the basis weight of the finished (air-dried) board. The factors required for determining the output of this type of machine, are greatly different and also more complicated than those involving cylinder or fourdrinier machine operation. The economy of manufacturing handmade boards under present conditions is considered. Five diagrams are given. Heinrich Mory. *Das Papier* 3, 274-9 (1949). (In German).

Linen Dryer Felts in the Paper Industry

These are data published several years ago, which have now become available. Under normal conditions, Finland's paper industry required about 350 tons of felts *per annum*, and in terms of finished paper, 600-700 grams felt per ton. The only felt mill in Finland (at Tammerfors) produced only about 1/3 of that required by domestic consumption (made from imported wool and cotton) and the remaining two thirds were also imported, but in the form of finished felts.

During the war, a critical situation developed, and experiments were made with domestic raw materials—especially linen. The Tammerfors mill produced linen felts, and the results proved encouraging when tried out in the Björneborg paper mill. Other mills then proceeded to experiment with these felts, about 80 of which were in operation in 1945. Mill data with these felts are included in the first article, but additional information was required because most of the paper machines operated at reduced speeds. Experiments with press felts made from mixtures of wool and linen for pulp drying and for paper machines were in progress in 1945.

In a second article the author reports on further operating results with linen felts in 14 different Finnish mills. Data for individual felts are given to illustrate the marked differences in felt life which may be encountered. Since the price differential between woolen and linen felts is small, paper production per kilogram of felt may be taken as a measure of the feasibility of using linen dryer felts. Of 71 used linen felts, 22 gave poorer, 8 gave approximately equal and 41 showed better performance than the felts used previously in the mills under discussion. It may be said that on the average, the linen felts gave 17.87 per cent better operating results than those used previously.

Thus the Finnish linen felts gave results exceeding expectations and the author feels experiments should be furthered. Felt quality can only be improved significantly when better looms have been imported. H. Honauer. *Finnish Paper Timber J.* 27, No. 17, 247-52 (1945); 28 No. 7A, 26-31 (1946). (Original in Swedish with English summaries).

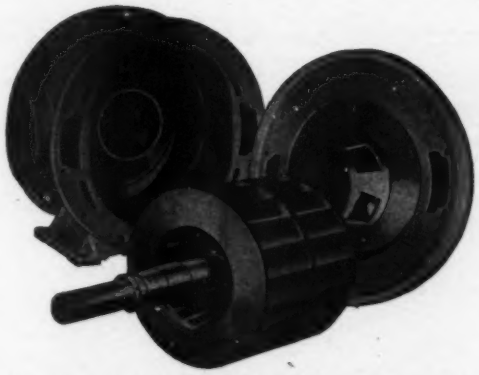
Toxicity of Effluents from Kraft Mills

The author used roaches (i.e. the fish) as his test fishes and the "poison unit" developed by Bergström and Vallin (cf. *Chemical Abstracts*, 34, No. 8, 2597 (April 20, 1940)). In the spring of 1948, effluents from a number of Swedish sulphate mills were tested and compared with data previously collected from various other mills in Sweden. In the earlier results, about 80% of the toxic materials found their origin in the resinates in the diffuser water. In 1948, however, better washing techniques and increased diffuser capacity had reduced these toxic components considerably. In the more recent studies, the most harmful constituents proved to be in the condensates from the digesters. These toxic materials, however, were largely volatile and could be eliminated by suitable aeration. A number of Swedish mills use the Bergström "exhausting tower" in achieving this result. (cf. *Svensk Papperstidn.* 42, No. 8, 233-8 (April 30, 1939)). Arne Lindroth, *Svensk Papperstidn.* 52, No. 9, 237-8 (May 15, 1949). (Original in Swedish).

Lodgepole Pine as Pulpwood

Experiments in the Scandinavian countries with *Pinus murrayana* (Lodgepole pine) are described. When planted in clay soil or in mixtures of clay and sand, the species shows an unusually high growth increment, as exemplified by an old plantation in Southern Finland, where the stand is 40-50 years old, with the trees at the height of their industrial usefulness. Lodgepole pine (at 30-40 years) showed a yield of 320 cubic meters per hectare. Corresponding figures for spruce and a domestic European pine were respectively 160 and 207 cubic meters. The possibilities of lodgepole pine as a pulpwood and its high resistance to fungi are outlined. Its growth is poor on acid soils, on swampy land or on very arid soils. J. Weck. *Svensk Papperstidn.* 52, No. 13, 340-1 (1949). (In Swedish.)

SIMPLICITY



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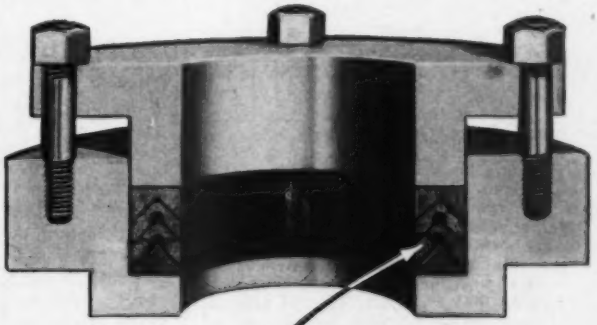

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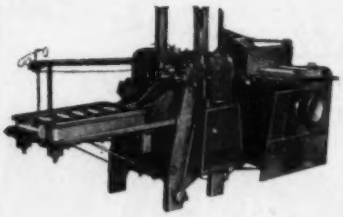

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Because of the importance of the above message, this space has been contributed by The Paper Industry and Paper World

Convention Papers • • • Abridged

Safety

Presented here are abridgments of several papers given before the Pulp and Paper Section during the Annual Safety Congress, held in Chicago, October 24-28, 1949.

The Safety of American Freedom Is Everybody's Job

DONALD J. HARDENBROOK
Vice President
Union Bag & Paper Corp.

The prevention of industrial accidents is without question one of the monumental accomplishments of the modern industrial age. You gentlemen who are vested with the responsibilty of carrying on this vital work should be proud of your positions, for they are indeed most unique in their dual opportunity for human and economic salvage.

Despite the growing recognition of top managements of the significance of safety education in plant operation, there remains still to be done a bigger and more intensive job of preventing more than 17,000 workers from meeting their deaths and approximately two million from injuring themselves yearly. The direct economic cost of accidents in industry is estimated to be over three billion dollars annually.

The industrial accident situation, therefore, presents a social and economic problem of considerable importance. At this session you gentlemen will be discussing the ways and means of reducing this appalling loss of life and physical damage.

I am not going to talk to you about the technical aspects of worker safety. I am going to talk to you on another matter which is just as much your responsibilty as an American citizen, as the carrying out of your duties of safety direction.

Freedom Calls For Responsibility

The subject on which I am going to speak is to me the most important one of today. I hope you will bring it to the attention of your friends and the people who come under your supervision. And I hope you will urge them in turn to pass the message along to all those with whom they come in contact.

If there is one lesson that the history of man's struggle for liberty seems to prove, it is this: The individual who desires the real blessings of religious, political, intellectual, and economic liberty, must assume a very large portion of the responsibilty for his own well-being. If he is unwilling to do so, and places that burden on the shoulders of government, he will soon find that he has reared a Frankenstein monster, whose appetite for control is literally insatiable, and which sooner or later will devour all his freedoms in the process of expanding its power.

Backward across the centuries we can see in this age only a few remaining symbols of those ancient autocracies, which destroyed themselves in attempting to dominate the world at the expense of freedom. But here on this continent our forefathers found a new freedom.

And if ever there was a living illustration of accomplishment, it is certainly our own United States—in the struggling Colonies, beginning in poverty, with scant equipment, growing slowly through two hundred years, then bursting forth as the marvel of economic and social achievement in all history.

Enterprise Built The Nation

Our ancestors worked long and hard. They lived frugally, although not safely. They had scarcely more of material things than the populations of a thousand years before. Yet within a space of five or six generations, these straggling colonies were transformed into an industrial nation of incredible wealth. Its population enjoyed the highest standard of living since the beginning of civilized man—the fruit and the flower of a free social and enterprise system.

But since the adoption of the American Constitution 162 years ago, many of us have forgotten the value of freedom and how easy it is to lose it.

For many years loud voices have been pointing out the weaknesses of private enterprise, without pointing out its virtues. For a generation our people have been influenced by insidious propaganda to depend on government, instead of relying upon their own initiative. For nearly a generation an un-American philosophy, that outstanding individual success is wrong, has been widely expounded.

We have been told, as if it were a new idea, that a government-controlled economy will bring more benefits to the people. And this is claimed despite the fact that there is nothing new in government-planned or controlled economy. Human beings have lived under various forms of that so-called social security for thousands of years. The price they paid was persecution, poverty, misery and loss of religious, political and individual freedom.

I mentioned earlier in my remarks that we can see in this day and age only a few remaining symbols of Old World autocracies which divided peoples and destroyed empires. In a way that is too bad, for modern people would never think of accepting statism, if they knew the history of its failure down through the centuries of the past. The dictators of ancient times used the same rabble-rousing techniques of deceiving the mass population which the dictators of today employ. They promised unearned affluence which eventually turned out to be the club and the sword, and poverty and starvation.

Dictatorship succeeded dictatorship, destroying not only the constitution of the Republic, but eventually all sense of political responsibility among its citizens. More and more planned economy followed, which led to more and more economic confusion. The currency was inflated; there was great unemployment in all the principal cities; no less than twenty per cent of the population were on the public payroll; taxes were so high that farmers were compelled to turn their lands over to the government. Collective farming was attempted, but the govern-

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ment could not get people to work because the proletariat no longer had the desire or habit of labor. The people lost political interest. Few cared to hold office. They would not even fight to save themselves. Finally the border was opened and the barbarians were brought in to raise crops and man the defense. It was not until fifteen hundred years after Cicero that a group of Italians in Florence was able to set up a new republic.

So it is a curious fact of history that periodically nations embrace, with hysterical and fanatical zeal, economic and political philosophies that time and time again have been tried and then exploded as false and unworkable. And despite this fact of history, the general idea of the collective state has in recent years made tremendous strides in our country.

Collectivism On The March

Our democratic system is still in great peril. The insidious and subversive forces which for years have been penetrating the fabric of our national thought and institutions are still at work, although at times they appear to retire under cover.

And it should be realized that collectivism moves forward by a series of sudden plunges, and history reveals that dictatorships are never really apparent to the people of a country until they are actually in power. The modern history of Russia, Germany, and Italy are striking examples of such transitions.

In our national emergency of World War II it was necessary for the people to endure a lot of government management. In fact, it was necessary for government to coordinate and direct almost the entire economy of the nation. Many employers and employees found themselves, practically over night, directly or indirectly working for government.

To finance the war program the Government went into debt at a rate exceeding $150,000,000 a day. Unemployment became a thing of the past. People who formerly had struggled to make ends meet began to accumulate surplus cash, which naturally gave them a feeling of security they had never enjoyed before. It is understandable how some could feel that perhaps a new way to permanent prosperity had been found, not realizing that the enormous war demands were creating a temporary abnormal situation.

"Free Enterprise" Misunderstood

So we find ourselves in this day and year at a crossroads, with our time-tested tradition to defend or discard. Naturally we cannot expect public opinion to defend that which it does not understand. And it does not seem to understand the label "free enterprise," which means one thing to one person, another to another, and not enough of anything to the great majority.

Opinion polls show that only three in ten know the difference between free enterprise and state socialism. Only one in four knows what the Bill of Rights is.

The attitude of youth is a good test of the way any nation is drifting. After talking with a number of high school and college students in recent years, it is my firm conviction that a lot of young people in our schools hold the following two vague impressions:

First, many believe that private enterprise is a failure, although they do not seem to know what private enterprise is, and could not give a reasonable definition of it. They do not understand that it is the right of individuals in any station in life to own property, to start small businesses, run them, and to keep and invest the profits of their labors. On the contrary, they have a hazy notion that it is an unfair system that gives special advantages to big corporations and people of wealth.

The second vague impression they hold is an idea that a government-planned economy is the remedy for all economic ills, a panacea for all the evils they think they see in private enterprise. They do not realize that quite to the contrary a government-planned economy leads to one end—state control—with no right of private ownership of property, no right to start and own a business, and no right of the individual to join with his fellow workers in negotiation of wages, working hours and working conditions. In summary, an ant-like social system in which the individual lives for the state, as opposed to our present democratic doctrine of the sanctity of each individual personality.

Not having thought this issue through and having no textbooks that define adequately what private enterprise is, and its bond with human rights, a generation of youngsters is being reared which does not

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understand the basic fundamentals of American progress. This is indeed a matter of most serious concern.

And there is still another matter of serious concern and that is the adult attitude on the question of government-planned economy versus the system of individual free enterprise. A recent study discloses the fact that on the matter of economic principles the better a man knows his basics of economics, the more he turns to free enterprise solutions. In the higher educated group 72 per cent are "Free Enterprisers." However, among the poorly informed only 21 per cent are "Free Enterprisers." So you can see, gentlemen, that the basic problem involved here is the same as trying to get employees to practice safe working habits —it is essentially an educational job.

Perhaps it is right that our economic order should be re-studied. It is not perfect. It has been disfigured by depressions and periods of unemployment. Furthermore, the whole world is changing and America cannot ignore that. China has changed more the last fifty years than in the preceding thousand years. Europe is being pushed by the Soviet toward government dictatorships. Russia, Germany, and Italy led the way before the war. Most of the other countries of Europe are now pointing in the same direction. England, too, has taken its first socialistic step. The big decision of the next few years is whether the United States of America shall follow that trend.

Education Is The Answer

So, as we stand at the crossroads it is quite natural that the question be asked, "What can be done to direct America's course along the road of preservation of freedom and competitive enterprise?" A broad, long-range educational program is the primary answer. The teachers who direct and the people who pay for our schools must insist that textbooks and instruction are written to develop the facts about American history and citizenship. Instruction that fails to develop an appreciation of what made our country great is not teaching citizenship at all. To carry on our great responsibility in guiding our youth through its formative years, we must have the right tools to mould the character of young America.

There is also need for instruction on the adult level, so that our grown people who exercise the right of the ballot, shall learn why they must preserve our country's fundamental ideals.

Employers must assume their share of the responsibility. Their task is two-fold. First, they must demonstrate by their actions the benefits and virtues of free enterprise. This involves wisdom and business statesmanship of a high order. In some instances it involves breaking with precedent and plotting a new course that reflects the sense of social responsibility which industry must have if our economy is to be free.

Secondly, industry must carry its share of the job of education for freedom. Employers must see to it that every worker on the payroll be given an opportunity to inform himself on the basic principles of freedom, the functions of capital and the significance of the free market and the profit system in his life. Just think what could be accomplished if this subject could be sold to the worker as you are selling physical safety.

Labor and capital must join hands, heads, and hearts in a sincere effort to combat the common enemy, collectivism. When labor is convinced by proof that production for profit means profit for labor as well as for the stockholder, the threat of collectivism will vanish. For in the ranks of labor is a vast army of responsible men and women who know how to take care of themselves when their personal liberties, their families, and principles are threatened.

Since the true objectives of labor and capital are identical, our citizens in these fields should be led to understand this fact. Then, we would have a united harmonious citizenry, moving forward to still greater achievements, not a divided mass, wasting energy and substance on industrial strife—drifting toward a regimented economy and mediocrity for everybody. We should realize that freedom and liberty are of the soul. It is not a sentence in a constitution, nor a law passed by a legislature, nor a grant from a ruler. It is of the very nature of man; it is of the essence of his moral being.

Unusual Accidents in Paper Mills

O. J. SHERMAN
Safety Supervisor
Gaylord Container Corp.

My topic for discussion deals with happenings that do not usually occur. According to Webster, the word "unusual" means —odd, rare, irregular, extraordinary. From day to day we are confronted with problems that normally apply to the usual run of accidents. Just when we think our safety

program is taking hold and running smoothly, the *unusual* happens and knocks our program out of balance. Inasmuch as the type accident that I have for discussion can be classified as an oddity, and inasmuch as there is always the possibility of developing a lethargy to this type of accident, frank discussions and honest confessions of their actual existence can be beneficial to us, if we do not attempt to hide their skeletons behind the closed doors of our closets.

An avowal of accidents is no disgrace to any man; to make no effort to eradicate them is indeed disgraceful. I have often heard it said that "experience is not transmissible, no one will learn from the sufferings of another, he must suffer himself." I do not agree with the just-made statement. On the other hand, I will admit that personal experiences are perhaps our best teachers, but unfortunately that method of teaching benefits only the individual that survives the accident. We, as safety engineers and directors, must capitalize on the vast reservoir of material that is at our disposal in the form of experiences. This material must be analyzed with resoluteness in order that procedures and methods of teaching will be developed that will make lasting impressions upon our fellow workmen. Let's strive to do away with the old saying that "No one will use other people's experience, nor has any of his own until it is too late to use it." We must develop a determination to either find a way, or, if necessary, develop new methods whereby workmen will be on guard against accidents through a knowledge of experiences that are not necessarily experiences of their own.

To be aware of the needs of such gatherings as this is indeed a great step toward acquiring knowledge that is essential in our work. I feel sure that no one will deny that from day to day our remembrance of ideas will become dimmed, even those that are flashed upon the minds of our most brilliant men. In order to restore the brain to its highest candle power, repeated exercises of the senses or the reflection on those kinds of objects which first occasioned them, are a necessity in order to prevent a total blackout.

Though my topic covers quite a field, you can readily realize the problems that would confront an individual in preparing material on unusual accidents, if you had to depend upon happenings that had occurred in your respective plants. I am happy to say, that problem was solved for me by the co-operative efforts of the men affiliated with safety work in the Southern Mills.

After a careful study and analyzation of all the unusual accidents turned in to me, I realized the impossibility of presenting them all, for after all—the mind can absorb only as long as the seat can endure.

With this thought in mind, I have selected and prepared eight accidents that I classified as "unusual." Instead of presenting a bulky word picture, I have resorted to drawings, believing that a visual picture is worth a thousand words.

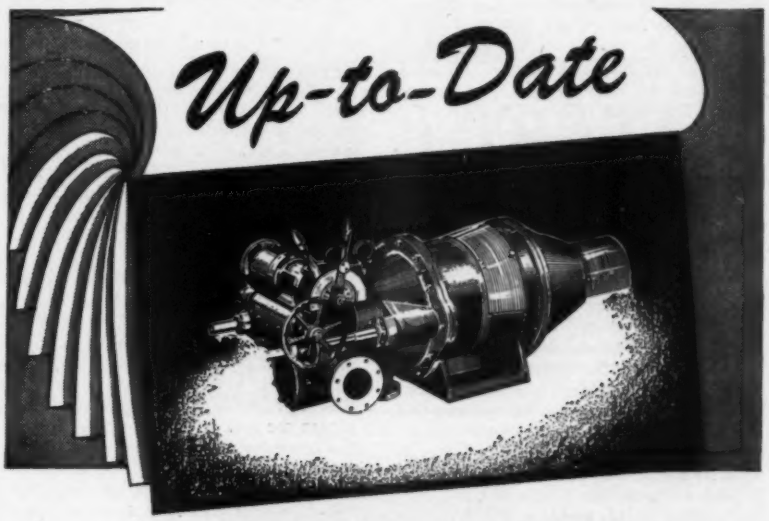
As for unusual accidents, I have shown you a few—some are silly enough to be amusing to the other fellow—the results to the actual participants, however, never are, for even if no serious injury resulted, participation in anything so silly is almost always a blow to the fellow's pride, especially when he stops to realize what might have happened.

Can any of you say, after viewing and studying the drawings that have been presented for your observation, that there is no such thing as an unusual accident?

Some may say that an accident can be termed "only" an accident. As far as this statement goes, it is correct. However, it does not go far enough. For instance, when a person departs this good earth, and has passed on to the land beyond, no one will deny that, that person is dead—and again no one can deny that there are many classifications of causes of death. As *surely* as there are many classifications of causes of death—then *surely* there are many classifications of accidents, of which the unusual type is one that can be, and must be, classified as of the utmost importance.

It is our duty as safety engineers and safety directors to present a safety program to our fellow workmen in such a manner that we will receive his full co-operation. For you know and I know that unless there is a unity of effort on the part of all concerned, regardless of what we do, or how we do it, our accident records will increase and our safety programs will fail.

Industry and management can no longer tolerate a complacent attitude in regards to accidents of any type. Most of you will agree that the gravity of the world situation has largely been brought on by our



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complacent attitude toward Communism, and again many of you will agree that the complacent attitude of our workmen in regards to dangers encountered in their daily work, results in accidents that could be avoided. Many wonder if we are to again be confronted with the problem of "too little and too late." Let's not leave our destiny to chance for the "doctrine of chance is the Bible of the fool." Our national program and our safety program are synonymous in that both require adequate preparations and definite execution, so that they may meet any eventuality of our day and time.

We have found out through experience that the best planned programs often have mistakes in them, so in closing, and with this thought in mind, I say to you, "When a mistake is made, don't look back at it long. Take the reason of the thing into your mind and then look forward. Mistakes are lessons of wisdom. The past cannot change. The future is in our hands.

Specific Safety Techniques

EDWARD G. HOLTZMAN
Head, Safety and Medical Departments
Industrial Relations Division
Wagner Electric Corporation

Have you ever heard a safety director or safety engineer* say, "I don't understand why I can't sell my management on safety," or, "I can't seem to impress our foremen with safety." Year after year at these congress sessions someone in the audience will get up and make those statements.

Since we hear this complaint so often, it must be a very real problem for some of us. I think we need only look at ourselves for the solution to this problem.

Isn't it logical to believe that the very fact that you are employed as the one in charge of safety is prima facie evidence that your management is interested in safety? The fact that you are up here should convince you that men in your top management are "believers."

There are some who say, "Why should you have to sell safety? Any dumbbell should know that working safely is only self-preservation, the first law of nature!"

(*) For the purpose of this discussion safety director, safety engineer and safety inspector are synonymous.

To those I say: Why do food and clothing producers spend millions of dollars each year on selling and advertising? Food and clothing are necessities. Why should one have to try to sell them? These manufacturers use extra efforts to sell for the very same reason that you as a safety director must sell your product. In order to be able to sell you must know the secret of good human relations. It makes no difference how brilliant you are or how much ability you have. If you are weak in human relations, you won't get very far with a safety program in your plant. Human relations is really just a fancy name for the ability to get along with people. Most of us like to believe that everything we say, do, and think is controlled by our reason and our intelligence. The world would be a very different place if that were true.

The relation of the safety director to the general plant personnel is peculiar in that he represents the interests of both management and the workers, and in this position can get himself into some pretty difficult situations if he isn't careful.

If you could look right inside the minds of the people in your plant and see what they really think of the safety director, you would, of course depending upon the safety director, find respect, fear, confidence, suspicion, liking, dislike, contempt, genuine friendship, and so on through the entire list of human feelings.

These men and women who work with you are all, like average Americans, reasonable people, but they are all governed by their emotions, and these emotions in turn govern the manner in which they work and the atmosphere of the entire plant. For this reason the safety director must use enthusiasm, sincerity, tact, courtesy, cheerfulness, friendliness, initiative, persistence, memory, application, and every other attribute at his command to accomplish this purpose. To my way of thinking the sum total of these qualities is salesmanship. A safety director must possess salesmanship, for he is called upon to sell safety to the entire plant. The man that he is required to sell more often than anyone else, however, is the foreman. Very few safety directors will disagree with the statement that the foreman is the key man in any industrial accident prevention program.

It would seem logical, therefore, to study the methods required to sell this key man. Since, if you sell him, your program is usually a success.

Let us start with the first in our list:

Enthusiasm

The first quality in a safety personality is enthusiasm. Emerson once said, "Nothing great has ever been done without enthusiasm." Not a single great achievement in world history has been accomplished without this remarkable quality. Study the successful safety men you know and you will find them imbued with an enthusiasm for their work which is contagious. Not only are they themselves excited about what they are doing, but they also get you excited.

What is enthusiasm? Enthusiasm is defined by Webster's Dictionary as "impassioned emotion, eagerness on behalf of a cause, fervor." An enthusiast is defined as "a person of keen and ardent interests." A better definition would be, "A spirit which animates the whole body (face, voice, and action), and makes an attractive and convincing salesman out of an assortment of dead flesh and bones." Enthusiasm generates enthusiasm; indifference generates indifference. Do you want the foreman to be enthusiastic about safety? Then become enthusiastic yourself. Enthusiasm like a smile is infectious.

How can this important quality be secured? Here is a formula: be enthusiastic about safety, study it at every opportunity, keep working on it, keep developing new applications, learn new methods.

Do you want to become enthusiastic about foremen? Study foremen, and list their different types, and how each type should be handled; learn how each type reacts to different approaches; discover what makes some accept your ideas and others reject them. The more you know about people, the more enthusiastic you become regarding them.

Are you enthusiastic about the company for which you work? Too many safety experts are so engrossed in their own immediate objective that they fail to develop themselves in the over-all company picture. Many of them have no idea of the yearly output, amount of sales, relation to competitors, and the other important considerations in your company. Don't forget, the other people in your organization are interested in these things. To know about them brings you closer to these people. "Not related to safety you say?" Injuries in your

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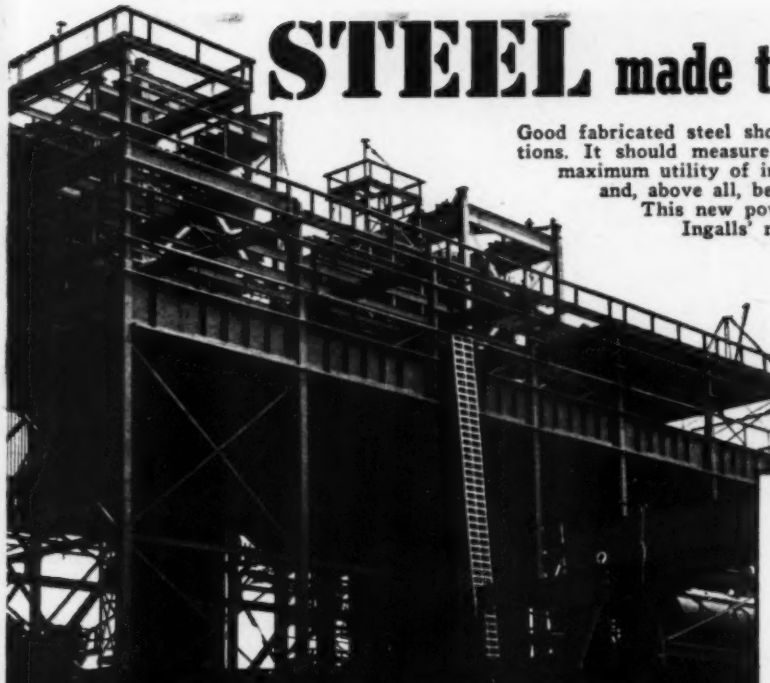

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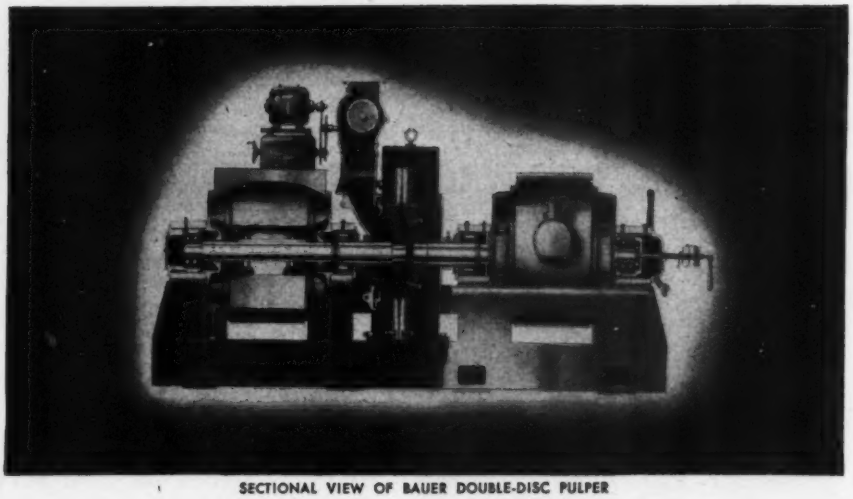

SECTIONAL VIEW OF BAUER DOUBLE-DISC PULPER

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The Bauer machine makes a desirable pulp for liner because it brushes and works upon the diameter of the fiber rather its length.

This quotation is from an article describing the equipment in a pulp and board mill. It emphasizes a characteristic of the Bauer Pulper; viz., the production of long fibers.

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plant are directly related to these items! If you relate them in these terms to your superiors, I wager they will get an entirely new conception of the safety department.

Do you know of any job other than safety work where more can be done for mankind? Yours is the finest mission in life—be proud of it.

Sincerity

Webster defines sincerity as "being in reality what it appears to be, genuine, true, real, free from hypocrisy."

How can a safety engineer be considered genuine unless he is ready to give a fair deal to his employer, employees, and himself? Is he giving these three a fair deal if he does not make himself as proficient in his profession as possible?

Your company has invested capital, management, and labor in the production of its products. To be able to pay wages and salaries to its employees, rent to its landlords, and dividends to its stockholders, the products have to be sold at a profit. A bad safety record will cut deeply into profits.

Suppose that a safety engineer who has responsibility for a safety program does not have ability to study thoroughly his plant, the people in it, their types, and the modern safety engineering methods. His company has chosen him because they believe he will study ways and means to reduce accident and injury cost. Instead of that the safety engineer has decided to make his position a soft job, instead of trying to improve himself. He decides to let his company "hold the sack."

While his company has its personnel relations program, as well as its competitive position, endangered by such a safety engineer, it should be obvious to him that he cannot hurt the company without hurting himself. Lack of genuineness, that is, insincerity, is a quality that grows like a cancer, if it is given any encouragement. Sooner or later, unless heroic methods are taken to uproot it, it dominates the safety engineer's life and becomes evident to all his associates.

The limit of his progress is then reached, as there is no hope for advancement. All growing companies seek to advance one type of man: he who develops superior knowledge regarding the work he is doing.

Tact

When a safety engineer goes into a department (incidentally, too few safety engineers get off their swivel chairs and into the shop enough), and he spots a hazard that should be corrected and the foreman disagrees, there are many opportunities for friction between him and the foreman.

Tact is the lubricant which keeps the wheels of safety selling running smoothly. Tact prevents the wearing of personalities on each other. It keeps them operating harmoniously in the oil of understanding.

Webster defines tact as "sensitive mental perception, nice discernment of the best course of action under given conditions; ability to deal with others without giving offense."

A safety engineer may have every justification for recommending the correction of a hazard but may get foreman resistance through lack of tact. A certain safety engineer I know has considerable technical knowledge in his field, but is well-known for his use of the term "Bud." He says, "Now don't forget this, Bud" or "Listen, Bud." Can you put yourself in Bud's shoes? You would probably forget what the safety engineer was trying to tell you and concentrate on the irksome word "Bud."

This safety engineer lacks what Webster's dictionary calls "sensitive mental perception." He is self-centered, he does not put himself in the place of the foreman and imagine how he shows up in the foreman's eyes. He does not get the foreman's viewpoint.

Tactful Disagreement

A tactful safety engineer does not contradict. You and I both know how hard it is to keep from contradicting a foreman when he does not see things our way. It makes your blood boil when he says, "Well, nobody's been hurt on this thing in 15 years while I've been here, and I don't see any reason to change it." Tactless safety engineers cannot tell foremen that they are wrong without injuring their feelings. If you use tact, you can partially agree or produce an appearance of agreement before you disagree. You can protect the foreman's feelings by "letting him down easy."

You might use the following:

"Yes, but don't you think . . . .

"I am glad to get your viewpoint, but—

"I am glad you brought that point up, however, experience has shown . . . .

"It does seem as what you say meets the situation, nevertheless . . . ."

Notice that each of these phrases does two things (1) agrees (2) disagrees. This characterizes all tactful statements. When this order is reversed, tact is conspicuous by its absence.

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Picture yourself at your own desk discussing safety problems with some of your staff and your boss comes over to your desk and says, "with all the injuries happening in our plant these days, I wonder why in the devil we have a safety engineer. We could probably do just as well without one." Without asking I already know your reaction. You've been ridiculed before your own department. You'd probably be so mad you would tell the boss to go "stick" his job.

Now picture yourself going into one of the departments in the plant and ridiculing a foreman before his department for not correcting a hazard. Do you think you've made a friend of him? Not on your life. He will do everything in his power to oppose anything you recommend. Enough foremen with this attitude could be fatal to any safety program.

The desire to be important is the strongest urge in human desires. The safety engineer who realizes and takes advantage of this is well on his way to success.

Making the other fellow feel important doesn't mean that you have to pamper the foreman or make a doormat of yourself. It just means that you must take every possible honest opportunity to say and do those things which will make the foreman feel important.

Courtesy

Courtesy is defined by Webster as "politeness, affability, civility, or respect." It is to the safety engineer's personality what luster is to silk, what sparkle is to the diamond, what finish is to the piece of furniture.

Courtesy is a polish that distinguishes the agreeable and co-operative safety engineer from the self-centered and contentious one. Being a surface quality, it is readily seen, and the lack of it quickly noted.

Courtesy is a quality that is universally demanded and appreciated, since it evidences a spirit of co-operation and desire to please. The possessor of this quality gets co-operation and pleasant treatment from those on whom he exercises it.

Cheerfulness

Cheerfulness is a desirable quality in a safety engineer because traditionally he is known as a gloom spreader. Gloom and pessimism are too often his main tools. Certainly he is not able to go around with a smile on his face immediately after a lost time injury, but the fact that you are in safety work should not in itself bear down on your personality so that you become known as the next thing to an undertaker. You can be cheerful about safety work as much as any other job. Think of the good things in your work.

Friendliness

Abraham Lincoln said, "If you would win a man to your cause, first convince him that you are his sincere friend." In every successful discussion with a foreman there must exist a certain brotherly good feeling to make it possible for the foreman to consider the safety engineer's claims.

The foreman can have no more confidence in the safety engineer's recommendation than he can have in the safety engineer himself. No stream can rise higher than its source.

The quality of friendliness has won many a foreman when nothing else would produce results. It is harder to turn down a friend than a mere acquaintance. All of us like to do things for our friends, we like to help them.

Initiative

Different kinds of intelligence tests are being experimented with in numerous colleges and business organizations in the endeavor to eliminate unsuitable human material, for the human's benefit as well as that of the organization seeking the most efficient people.

Certain of these tests no doubt classify safety engineers on the basis of mental alertness and thinking capacity. However, there is one supremely important quality of personality which they cannot determine and that is initiative. It has been found that a person may have the quality of initiative to a high degree and only rate fair in intelligence tests, and conversely a person may rate 100 per cent in intelligence but be deficient in self-reliant enterprise.

Of what use is it for a safety engineer to know correct safety engineering techniques unless he has the energetic willingness to put them into operation. Of what use is it to know that goggles and safety shoes will prevent injuries unless every effort is made to get the maximum number of employees to use them?

Persistence

We admire the bulldog because he hangs on. His motto is "Never give up." He strains every muscle and gives every ounce of his energy to win.

No less do people in an organization admire a safety engineer who has developed this quality and admiration often develops into friendship. No one has respect for a quitter, a safety engineer who readily takes "no" for an answer, a safety engineer who is quickly defeated by strong resistance.

Persistence wears down resistance—no matter how formidable. It gives management an impression that the safety engineer expects a thing to be done, and management will sooner or later do what is expected of them.

Memory

No progress can be made without this quality. The safety engineer finds that memory of names and faces is very important. The sweetest sounding word to a man is his name. Some people are born with exceptional memories, but most of us have average memories which must be developed, if we are to make progress above the mediocre.

Numerous complicated and pseudoscientific systems of memory training are on the market, but it is unnecessary for us to worry about these, as we can develop our memory, if we follow three fundamental principles of memory training which psychology gives us:

(1) Concentrate on the thing to be remembered by repeating it several times.

(2) Associate the thing to be remembered with some familiar object or idea which makes a striking impression on the mind.

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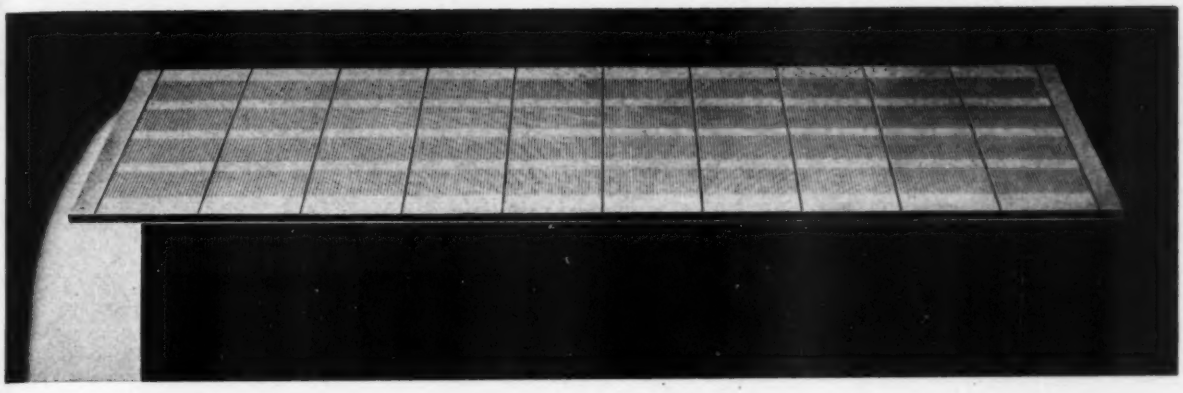

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(3) From time to time think of the thing to be remembered so that the desired thought channels will be developed.

Application

It is easy for us to talk about personality traits, but another thing to apply them. It is the last yard that wins the race. It is the idea that is applied that counts, and not the hundred ideas that are known but not used.

What is the best system of analyzing your personality and seeing where you're deficient? This is an important question because you will not put forth great effort to acquire the success qualities as applied to selling safety, unless you are certain that you are deficient in some of them.

One thing is certain, and that is you cannot judge yourself. This is true because of the egotism that we all possess.

We are all prejudiced in favor of ourselves and a prejudiced judge cannot produce justice. If we want an unbiased analysis of our personalities, we will have to use some other method. Here is an idea that you can use. You'll find it works exceptionally well.

This is what I call a "safety engineer's rating chart." (It can be used by anyone.) Here is a chart showing all the personality traits that we have discussed. I have had prepared in smaller form a sheet showing several of these traits, which you may take when you leave this room. I suggest you give them to a close friend of yours and ask that he in turn distribute them to other friends of yours with your own address on the envelope.

The friend that distributes the charts should ask the people rating you to study you for two weeks, and then return the chart directly to you. This method insures secrecy as to the rater. You also want to keep them as friends. If you're thin skinned, don't by all means try this for if you can't take it, you are apt to get a little perturbed at some of the ratings. But if you sincerely want to improve your personality this will help you more than you can imagine.

Safety Engineer's Personality Rating Chart

Ratings	Excellent	Good	Fair	Poor
Enthusiasm				
Sincerity				
Tact				
Courtesy				
Cheerfulness				
Friendliness				
Initiative				
Persistence				
Memory				
Application				

When I made this experiment I was rated poor on certain qualities. Before I realized what I was doing I was saying to myself, "Oh pshaw, they don't understand me." Because of this natural reaction, you will find that analyzing your personality is one of the most difficult problems you will face.

If the majority of ratings show that you are low on certain qualities, it is good evidence that there is room for improvement in these respects.

It is not claimed that you can revolutionize your personality by what has been said. But you can improve your personality from 5 to 10 per cent. Exceptional safety engineers will do considerably more.

But do you realize that an improvement of only 5 per cent in personality may produce a 50 per cent increase in your effectiveness as a safety engineer. If you have just a little more enthusiasm, sincerity, tact, initiative, and so forth, as compared with the other fellow, you will stand out prominently in the eyes of management as well as the employees. You are unusual, different, and therefore will attract attention. This method has worked for the top men in the safety field. It will work for you. Try it; the extra effort will pay off big dividends.

Finding the Accident Facts

E. A. PAGE
Personnel Superintendent
Kimberly-Clark Corporation

The subject of finding accident facts, in a broad sense, rightly includes such things as accident investigations, cause codes, inspections, record keeping, and very probably, the application of these facts against some sound and proven principles, so that proper corrective action can be taken.

Let's first look at several of these principles that I believe are fundamental. Acci-

dent prevention, like the manufacture of a good quality product, is a good common sense balance of a number of factors. To make good paper, you have to have an adequate and clean water supply, you must have a supply of the proper pulp, pulp preparation equipment, steam supply, and machines of the proper capacity in good mechanical condition. In addition to these, and far from least in importance, you must have capable and well trained operators.

Accident prevention, too, is not the result of any one thing. Often we are led to believe because some organization hit upon its main fault and corrected it with pleasing results, that this is all there is to a good safety experience. This is no more true or sensible than to burden a paper firm with an expensive filter plant, simply because some other paper company corrected its faulty production by cleaning up a dirty water supply.

Bearing this in mind, along with the request that the discussion be confined to the single topic of fact finding, we will discuss some features of fact finding that may be helpful. It is quite likely that you will be bored with my repetition of the point that you must *find the accident facts of your own plant,* but I believe it is so important that I am going to continue to stress it anyway. Kimberly-Clark, as you probably know, has several mills. Some of the fact finding techniques vary from mill to mill and some features are fairly common to all.

One of the means of finding out the accident facts is to hold mill inspections. Incidentally, this is one of the items which varies considerably from mill to mill in Kimberly-Clark. Some important things to remember when planning for your inspections are to have the person responsible for the area along with the committee, and, if convenient, let him record the findings so that the finished report appears to him like a list of things he plans to do to correct the shortcomings of his own department. This results in a much more co-operative attitude than if the report is made without his knowledge and a copy sent to him, making it appear that someone didn't trust him, and did a spot of spying in his department, and was now furnishing him with a list of things that were wrong.

Basically, two types of facts can be found on mill inspections. These are unsafe conditions and unsafe practices. It is important to look for unsafe practices as well as unsafe conditions, and we think that in order to get a balance, especially with new committees, this should be stressed. Don't be too discouraged if the first few trips end up with a rather imposing list of things to be physically corrected. This seems to be only natural and most committees, as they learn what to look for, will see the unsafe practices as well as unsafe conditions.

Many of the mills use Union people as part of the group. We believe that the mill manager should also be a part of the group. His participation lends a lot to the feeling that management is interested and really concerned with the people's safety. Most any manager can spare an hour or so a week to inspect a portion of the plant in considerable detail. Many of our managers rotate from one committee to another and spend something like one hour on this job.

Departmental safety inspection committees work out well in smaller plants, but don't seem to take, for some reason, in others. In one of our mills, the chairman of the department safety inspection committees act as the department representatives on the Mill Safety Steering Committee, which in turn acts as a safety planning or policy forming group. Many unsafe conditions and practices will be brought to management's attention in this way. Our committee at Lakeview Mill is a 50-50 mixture of Union and management.

A very important source of accident facts is the accident investigation. There are a number of important principles pertaining to the accident investigation which we have found to be true. First of all, accident investigations must always be conducted in an objective manner — no inquisitions. Lean heavily toward "what" was at fault rather than "who." However, when facts establish beyond any reasonable doubt that a person was at fault, with malice aforethought as it were, we believe it best to crack down.

Another important feature is to be sure to get *all* the facts. Don't just come to the conclusion that the guy was careless and should be fired. Most of you probably have seen the sound slide film that stressed all the incidents leading up to a puncture wound received from a nail in a loose board. All of us are prone to stop our investigations too soon—before the facts behind the facts have been investigated.

We publish these reports and interchange them between our mills. If you plan to do this, the reports should be looked over carefully to make sure that the mistakes made at another unit do not apply to your mill. If some of the errors do apply, they should be corrected with as much enthusiasm as if the accident occurred in your unit. In this connection, we find a tickler file very helpful, particularly in reminding either supervisors or the safety man of seasonal hazards, or for use in follow-up to see that recommendations are being properly carried out.

Record keeping is also a very necessary part of finding accident facts; that is, *if* the facts apply to *your* plant and not someone else's. Standard codes are to be recommended only if you don't make keeping the record the whole objective or spend a disproportionate amount of time on this feature. Adequate records of items that need special attention should act as guideposts, to show where you have been and how you are comparing with your own past record. They might include such items as injuries, causes of injuries, compensation paid, production lost, and other like facts essential to any intelligent safety program.

If your mill employs a plant nurse, a routine report indicating the name of the employee, injury, department, etc., is very useful. Be careful not to use such records to correct your supervisors though, or they are sure to jump somebody sometime, and so tend to discourage people with hidable injuries from going for first aid. At one time, we made a very secret study and analysis in one of our mills of these first aid records. We found some very peculiar things, too. One mill employing around 1,500 people dispensed over a ton of Bromo Seltzer in a year. This sounded a bit heavy, but we could find no evidence that it was walking out in bottles. A casual check with the nurse indicated that the figure was about right, and it was presumably being used for all sorts of ills, particularly hangovers. We were also surprised to find one man made 384 calls at the First Aid in a 365-day period. Another made 352 calls during that time. Some discreet inquiries revealed that the first man had a bad case on the nurse, and that the second was a Union officer who stopped in to see what was "cooking" across the mill. Others ranged down to only 4 or 5 calls per year, and, I believe, if I recall correctly, the aver-

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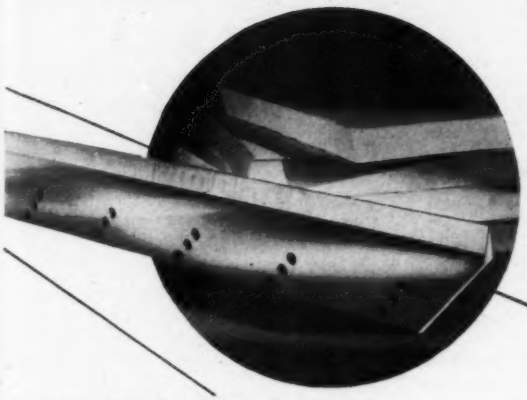

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age was a little over one call per month.

No doubt many other special studies will occur to you from time to time, and they will seem well worth the time and effort necessary to complete them. On one or two occasions it has been helpful to chart accident experience by department and by shift or foreman. It is positively surprising how half a dozen seemingly unrelated items will suddenly fit together and point out a clear corrective procedure.

Well, let's sum up what we have talked about so far. First of all, if you would improve your accident experience, you must *find out what is wrong*. It seems very logical to me that you must find what is specifically wrong with your particular plant or department. National averages cannot be used for this purpose. They have an altogether different function. To guide your program on these averages would be comparable to a physician putting a cast on a patient's good leg instead of his broken arm because somebody's study, some time, some place, indicated that more legs were broken than arms. Compare your findings with national averages, but don't use these averages to guide your program. Find your own accident facts and guide your own program accordingly. So point number one is, *study your own problem.*

Don't lose sight of the fact that fact finding is only one part of a successful accident prevention program. Safety, like a good sheet of paper, is the result of several very necessary and interrelated parts, and the balance or the effort any one outfit must put on the various factors varies with the conditions of their plant. Again, you can't be lazy and let someone else find out what is wrong. As an indication of what I mean by some of these other factors, it seems to me that these are essential:

1. Teach employees the safe way
2. Make the supervisors responsible for safety in their departments
3. Develop and enforce sensible safety rules
4. This is the one we have been discussing. Hold regular inspections and investigations; in other words, find the accident facts
5. Along with finding the facts, keep adequate records
6. And this is far from least,—stimulate interest in accident prevention all up and down the line

There may be other parts of a successful accident program, but I believe these cover most of the theory. The facts found should be checked against some principles and thus point number two can be stated thus, *Keep a Good Balance Between the Various Parts of Your Accident Prevention Program and Put Your Effort Toward Correcting Your Own Weaknesses.*

My third point has to do with keeping the records. Adequate records should be kept in the same manner and for the same purpose that you keep books in your business—not just for the sake of having a place to put pretty little numbers down, but so you know where you have been, and so that you may learn what your specific trouble or weakness is. Point three then is, *know the score.*

The fourth point is really the most important of all. After you have found the facts of *your* experience, in *your* plant, and checked these facts against the sound and proven principles of accident prevention, then *you must take action.* Do it the same as you would correct a product defect. Decide what you can afford to spend and how you can get the best possible job for your money.

▼

▶ STEEL WORK BENCH—Equipto, Div. of Aurora Equipment Co., Aurora, Ill., has announced a new streamlined, 12-gauge steel-top work bench. The size is 6 ft long, 34 in high and 28 in deep. Colors are optional.

▶ HEAVY DUTY CASTERS—The Bassick Co., Bridgeport, Conn., has introduced a new line of forged steel precision heavy duty casters in 5-in, 6-in and 8-in diameter wheel sizes. The manufacturer recommends this line for operating loads of 1500 to 2000 lb per caster.

▶ CYANURIC CHLORIDE—American Cyanamid Co., New Product Dept., 30 Rockefeller Plaza, New York 20, N.Y., has announced pilot plant production of cyanuric chloride, which is used for preparation of dyestuffs and bleaching agents for textiles. It also offers possibilities for the syntheses of pharmaceuticals, high polymers, explosives, rubber chemicals, mothproofing agents, surface active agents and plasticizers.

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Amplifier

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Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa., has announced the first commercial application of its new Symmetron high-frequency, high-power amplifier. Eight air-cooled, plug-in, triode-type tubes are used in a concentric, symmetrical design. Three tuning adjustments required are cathode, plate and output coupling. The unit is available either as a complete 50 kw FM transmitter, or an amplifier to convert existing 10 kw FM transmitters to 50 kw operation.

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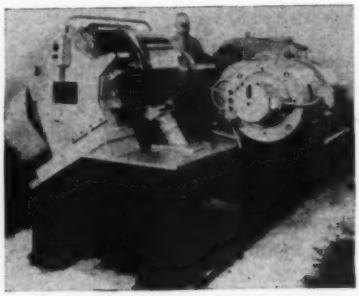
A new roller-type hydraulic machine, the Stacomizer, is now being used for experimentation in the processing of agricultural and forest products. Its operation forces the roll assembly to accept materials not accepted by other high pressure equipment with rolls in contact. This unit consists of three rotating members—a driven backup roll turning in a fixed position, a driven work roll that moves in a fixed horizontal plane, and a floating ring that revolves freely between the rolls which are under hydraulic pressure.

The Stacomizer is expected to displace many devices now used for crushing, grinding, macerating, blending and compounding, and to improve results obtained by present type rolling mills, ball mills, hydraulic presses and decorticating machines. Stacom Industries, Inc., 29-28 41st Ave., Long Island City 1, N. Y.



Signal System

Indicates failure or changes off normal.

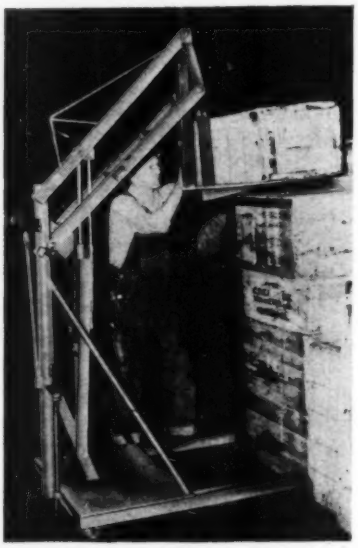
An alarm designed to make possible safety shut-downs, sequencing or inter-locking of plant operations, called Panalarm, has been introduced by Panalarm Products, Inc., 7218 North Clark St., Chicago 26, Ill.

This system may be actuated by a remote switch, thermostat, float-switch or changes in any type of equipment which can be reflected by an electric impulse to open or close a small relay. Safety and reliability are insured by making the lamps glow dimly during normal operation. If the signals go out of service or the bulbs burn out, the operator knows this at once. If an abnormal condition is present, two signal lights go on, and a warning is given by a horn or other sound device. When the failure is acknowledged by the operator, the horn is turned off and the white light goes off. The horn is immediately back in service and thus serves for any number of alarms. Many combinations of lights and signals are available to indicate the trouble line, when corrective measures have been taken and when the line is cleared back to normal. Cabinets are available in multiple units up to 12 in a single cabinet and are designed to allow extra space for spare units.

Pallet Crane

Combines flexibility plus bulky weight handling capacity.

Portable pallet crane is capable of handling large, heavy, bulky objects up to 500 lb, lowers to floor level and elevates to a maximum height of 5 ft, 6 in. Can be stopped at any intermediate height. Available with a hand hydraulic lift or with a motorized hydraulic lift. Unit is equipped with four easy moving steel wheels. Grand Specialties Co., 3135 W. Grand Ave., Chicago 22, Ill.



Flame Safeguard

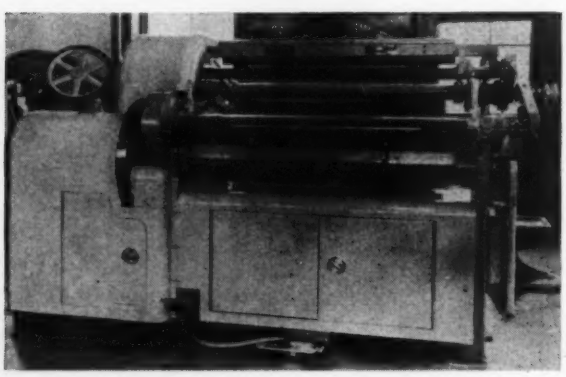
Flame failure protection is approved by all insurance laboratories

Provides operating flame failure protection for manually ignited oil burners, air heaters, ovens, kilns, etc., and is used with programming controls to protect automatically ignited oil burner installations. Consists of a phototube and amplifying system housed in a compact, rugged, dust-tight aluminum case. Entire control may be mounted directly on the furnace wall. Combustion Control Corp., 77 Broadway, Cambridge 42, Mass.

Batteries

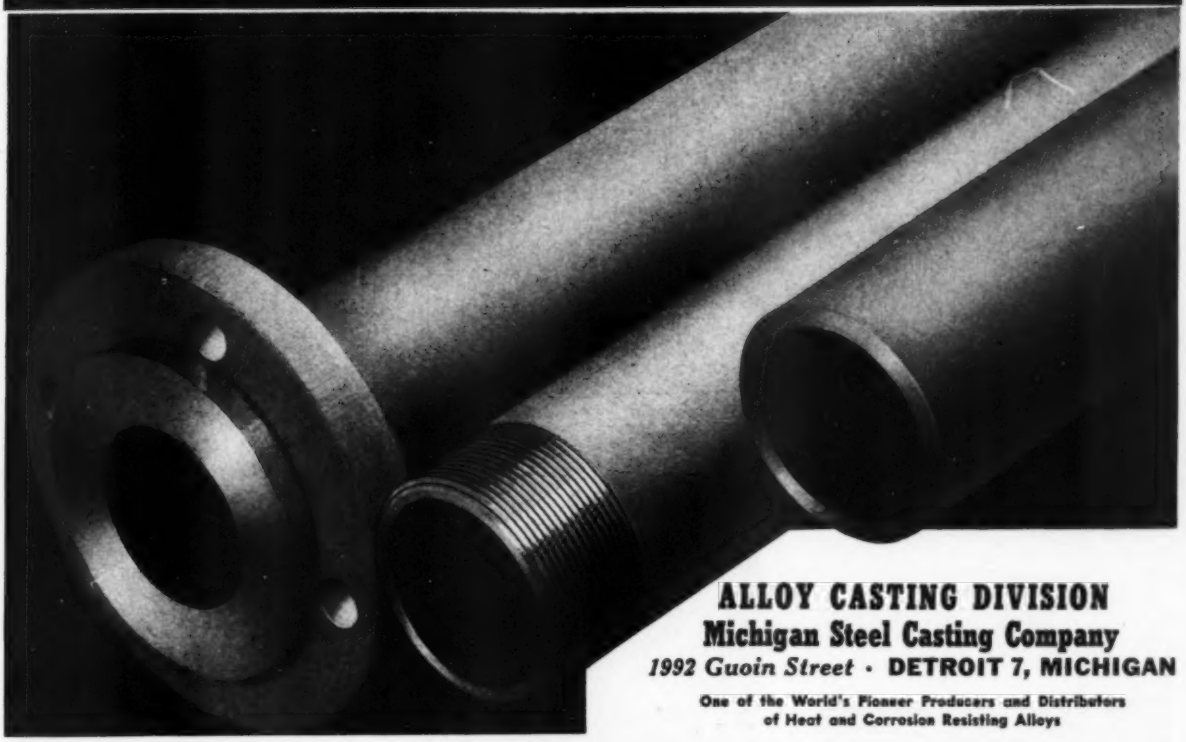
Contain a new and improved grid

Development of new casting rates and molding temperature control techniques which reduce grid porosity from 85 to 90 per cent give the "Z"-plate line batteries longer life and better electrical characteristics. All models of the Kathanode and Thirty types will include the new grid. Gould Storage Battery Corp., Trenton, N. J.



New Camachine, Type 40-1 DF, designed for converting short length rolls, is capable of speeds up to 600 fpm. Riding roll lift is electrically operated. Unit is completely enclosed for safety, with storage space for tools, etc. beneath machine. Cameron Machine Co., Brooklyn, N. Y.

MISCO *Stainless Steel* PIPE and TUBES



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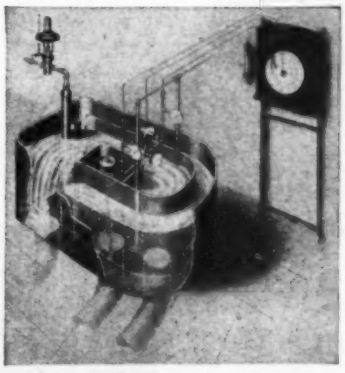

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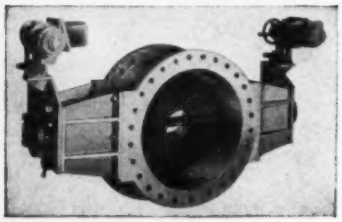
Dual Valve

Operates beyond the limitations of a single valve

Designated as Valve No. 725, this 36 in x 8 in 150-lb class B steel dual valve is designed for either a high pressure drop and small volume or a low pressure drop and

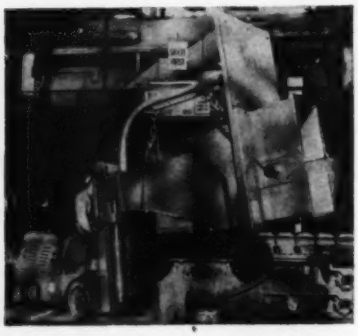


large volume, and for an operating temperature of 1,000 Fahr. Powered by separate electric motors, each alloy steel vane is operated independently of the other, insuring close control of volume and pressure. R-S Products Corp., Wayne Junction, Philadelphia 44, Pa.

Lifting Boom

For handling engines, long bars, bulky and odd-shaped material.

Model F-50 lifting boom reaches over machinery and stored material for lifting operations. Boom can be interchanged with the forks and attached to the carriage in



the same manner. Swivel hook can be positioned in any of the six positions on lifting boom or used with another swivel hook for lifting bulky equipment. Is used with the Buda 5,000 lb capacity at 20 in load center Model F-50 fork truck. The Buda Co., Department LB, Harvey, Ill.

Resins

Waterproof, with a very low rate of vapor permeability

New series of polythene resins for use as coating materials are called Alathon. The resins are highly resistant to chemicals and have excellent electrical insulating properties at high as well as low frequencies. They are tasteless, odorless and non-toxic. Outstanding physical characteristic is lightness. As coatings for paper, Alathon makes it resistant to chemicals, water, water vapor, and cooking oils and greases and at the same time gives it toughness and strength without imparting taste or odor or making the paper sticky. Alathon coated papers protect machinery and equipment at low temperatures and are claimed to protect electrical apparatus and equipment against corrosion and fungi during storage under hot, humid conditions. Molecular weights for the four Alathon resins, A, B, C, and D, range from 18-19,000 for Alathon A to 8-9,000 for Alathon D. Resins may be applied by commercial methods. E. I. duPont de Nemours and Co., Inc., Wilmington 98, Dela.

Shop Presses

Provide fast, versatile action for broad shop use.

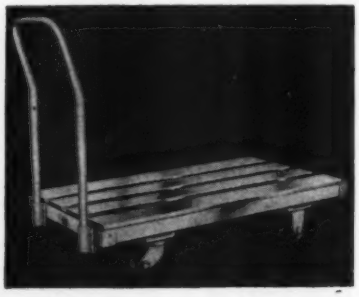
Features include a full 13-in pressure stroke, accurately matched and machined V-blocks, lower bolsters supported by bearing block on steel support pins, fast arbor press action eliminating need for separate arbor press, and operation by either hand or power pumps. A new, improved 2-speed hydraulic hand pump with automatic

shift permits fast ram speed. When the maximum 2- or 3-ton pressure has been reached the pump shifts automatically into high pressure. Rodgers Hydraulic, Inc., Minneapolis, Minn.

Flat Bed Truck

Will not rust, splinter, or absorb odors.

Built of tough heat treated aluminum alloy angles and hat sections, this material handling equipment is non-sparking and non-

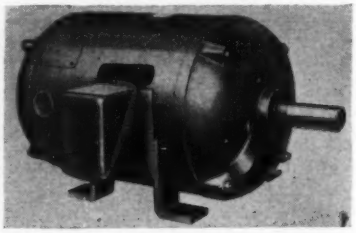


magnetic. The unit is equipped with 5-in. diameter aluminum wheels and casters, and is available in two standard bed sizes, 24 in x 48 in weighing 50 lb, and 30 in x 60 in weighing 60 lb. Tobey Mfg. Corp., El Segundo, Calif.

Motors

Frames and end shields are dripproof.

Protected-type wound-rotor motors are suitable for driving conveyors, crushers,



printing presses, fans, centrifugal compressors, etc. Built in NEMA frames 224-505 in ratings up to 100 hp and in larger frames up to 2000 hp. Motors are available splashproof and totally-enclosed nonventilated. Crocker-Wheeler Electric Mfg. Co., Ampere, N. J.

Conveyor Belt

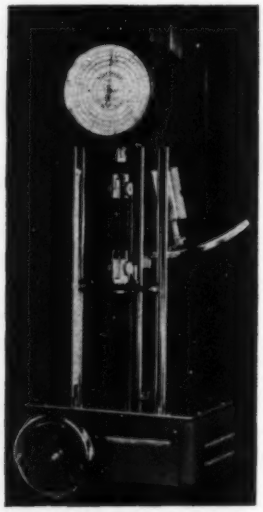
Abrasion resistance comparable to a good quality tire tread

Corrugated surface will raise light goods in cartons or heavy materials in bags up inclines of 30 to 40 degrees. Consists of a solid woven carcass, impregnated with a neoprene solvent cement for moisture resistance. The carcass is coated on the upper side with a layer of neoprene-natural rubber blend. Available in several thicknesses and in standard widths up to 24 in. The Russell Mfg. Co., Middletown, Conn.

Testing Machine

Priced to fit the most modest budget.

Claimed to be the first entirely hand operated physical tester available in such a low testing range. Range is from 0-100 lb.



Accuracy ½ per cent. Scales read from 0-10 lb in 1 oz divisions, 0-25 lb in 2 oz divisions, 0-50 lb in 4 oz divisions and 0-100 lb in 8 oz divisions. Tests specimens in tensile, compression, transverse and shear. Can be motorized. W. C. Dillon & Co., Inc., 5410 W. Harrison St., Chicago 44, Ill.

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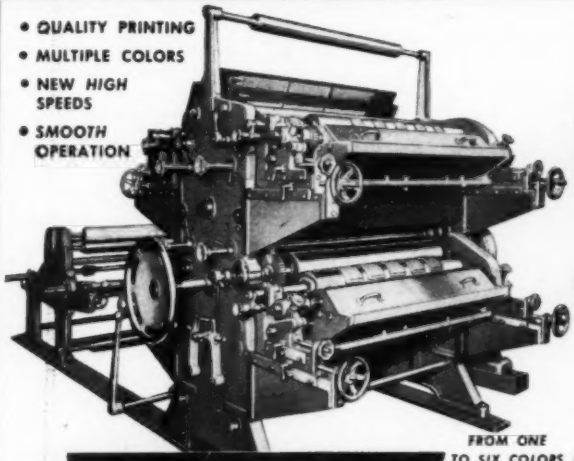

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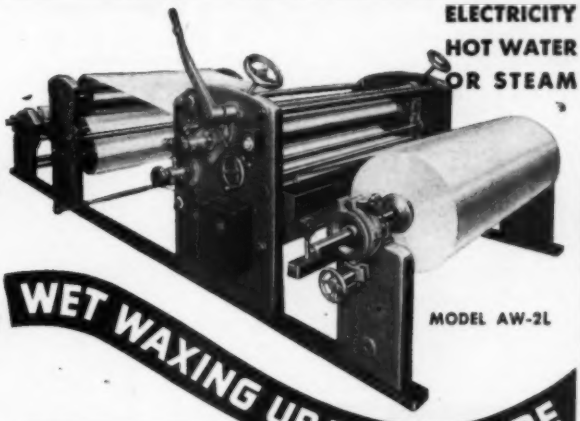

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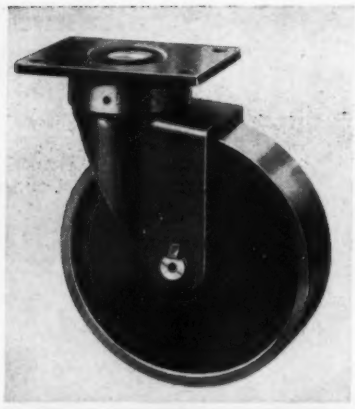

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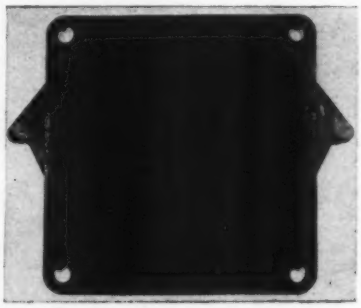
Made from a special plastic, these frames are tough and not breakable in handling.

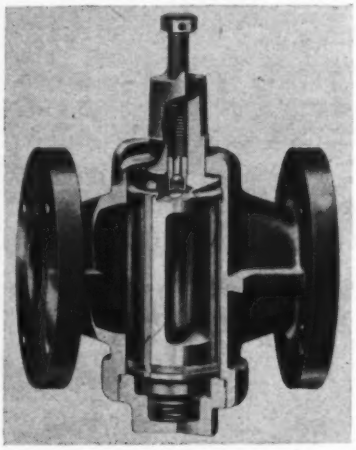


In tests, they showed no softening or deterioration at 300 Fahr. Hercules Filter Corp., Paterson, N. J.

Valves

Claimed to give longer leakless service.

New lubricated plug valve has a wedge action which not only adjusts itself for wear but also keeps the sealing surfaces of the plug and body in contact at all times to provide an extra tight seal against leakage and lower lubricant losses. Port areas are equal to the area of standard pipe. Ports have a complete lubricant seal, and positive, visible stops limit operation to a quarter-turn. Homestead Valve Mfg. Co., Coraopolis, Pa.



Tachometers

Suitable for motor and generator testing.

A new addition to Metron Instrument Co., 432 Lincoln St., Denver 9, Colo., series of precision tachometers is the 48K. Total speed range without adapters is 360 to 4000 rpm which accommodates all synchronous or induction motors and most geared type motors. Head adapters are available for checking high speed universal motors or extreme low speed gear motors.

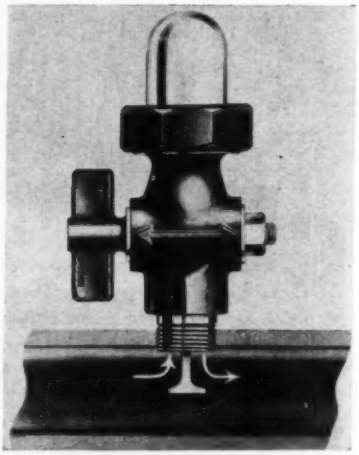
Any one of ten ranges can be selected by a rotary switch and no damage results from overspeeding up to about 8000 rpm regardless of range setting. The company guarantees accuracy of readings on all ranges to within ¼ per cent of actual speed. High accuracy is obtained by the use of a bridge circuit principle.

The 48K has such features as permanent lubrication, no limited-life components, low-torque operation and rugged construction.

Sight Glass

Can be used in any system through which transparent liquids flow.

A valve type sight glass makes it possible to observe clarity or turbidity of transparent liquids flowing under pressure through pipe lines. Differential pressure is established across the deflector to allow some of the liquid to circulate continuously through a glass observation bowl. Provision of the valve permits removal of the bowl for cleaning. Worthington Pump and Machinery Corp., Harrison, N. J.



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Designed for operation where complete eye coverage is unnecessary.

An outstanding feature of the headrest spectacles is unusual lightness. Plastic in design, yet ruggedly constructed, the headrest distributes weight over the entire head thus relieving pressure on the nose and face. Can be worn over prescription glasses and are adjustable to any head size. Spectacles take 50 mm lenses, and are available in shades No. 3 to No. 8. General Scientific Equipment Co., 2700 W. Huntingdon St., Philadelphia 32, Pa.

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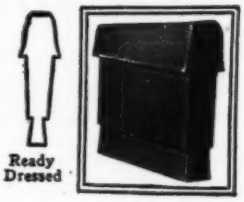

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IN 1926 an eastern board mill equipped its paper machine with Stickle Automatic Control and installed a Stickle Differential Drainage System. After ten years' experience with this equipment, the President and Treasurer of the company stated that "After installing Stickle Equipment we were able to increase production between 8 and 10 tons per day, as well as improve the quality of our board. We . . . can honestly say that its purchase was the best investment we ever made at our plant.

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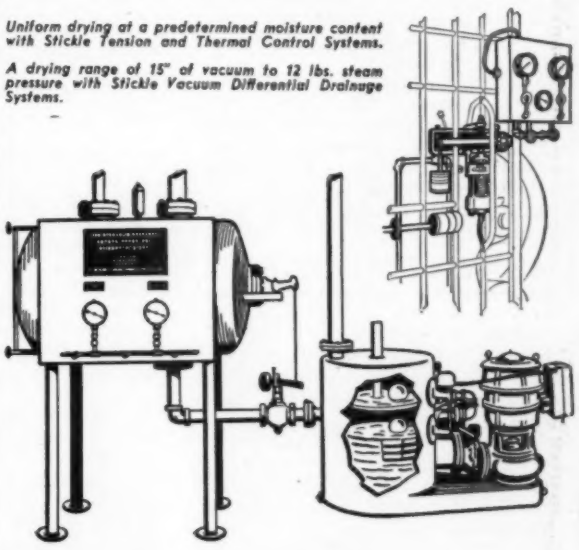
Uniform drying at a predetermined moisture content with Stickle Tension and Thermal Control Systems.

A drying range of 15" of vacuum to 12 lbs. steam pressure with Stickle Vacuum Differential Drainage Systems.



● Stickle Bulletin No. 160, "Stickle Steam Systems for Paper and Paper Board Mills," and auxiliary Bulletin No. 160-A, give information and data on Stickle Equipment, in use in paper and board mills throughout the States and Canada, providing manufacturers the advantages of increased production, improved product quality, and reduced operating costs. Mailed on request.

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New Literature . . . . .

Book Reviews

MATERIALS-HANDLING EQUIPMENT. By Matthew W. Potts. Published by Pitman Publishing Corp., 2 W. 45th St., New York 19, N. Y. 1949. 192 pages. 5½ x 8. $2.75.

This reference manual describes the basic types and application of materials handling equipment. Standardized nomenclature is used rather than the variety of trade names and colloquial terms. Equipment defined and described, together with general applications, covers conveyors, elevators, hand-operated equipment, hoisting machinery, trackless carriers, tractors and trailers, and miscellaneous equipment including the spiral chute, dumpster, straddle truck, dolly, derrick, pallet, etc.

Most of the equipment described is illustrated by sketches. All descriptions of equipment are uniformly treated and include (1) definition, (2) description, and (3) applications. This type of treatment makes the book easy to follow, concise in its information, and especially valuable as a reference manual and text.

THE MANUFACTURE OF PAPER CONTAINERS. By P. E. Verstone. Published by Verstone & Co., Ltd., Publishers, 41 The Mall, Ealing, London, W. 5, England. 1949. 293 pages. 1 pound, two shillings.

Revised edition on paper box and bag making describes every process in the making of all kinds of paper containers. 170 technical and practical designs show each container and how it is made, and 105 illustrations of the various machines used in the making of paper containers are included.

Contents cover description of the cardboard, paper and cellulose films used; description of the five groups of boxes, board lining, etc.; folding box or carton, including the one-piece form, display containers, etc.; description of the three groups of bags, animal and vegetable glues, synthetic resins, waxes and metallic films used as proofing materials, etc.; and many other chapters covering the manufacture of paper containers. An index and glossary of technical terms used is given in the back section of the book.

TREES. Published by United States Department of Agriculture. Obtained from The Superintendent of Documents, Washington 25, D.C. 1949. 944 pages. $2.00.

For those who would like to know useful and practical information about trees, this volume, in which nearly every aspect of trees, forests, and forest products is treated in non-technical language by 161 contributors, will serve as a valuable work of reference. For those who are unaware of the beauty and delight of the woods, it will be found interesting and inspiring.

Introducing the tree as a unit and living thing, it is next treated as a member of a small group—in cities and around homes—and, finally, growing together in wood lots, groves and forests, large and small. The main section ends with chapters on specific problems and values—insects, fire, recreation, wildlife, forestry, and economic importance.

Practical information on how to plant, care for, and protect trees, how to manage woodlands; scientific information on the growth habits and characteristics of trees and forests; and basic information on the present status and future demands on American and world forest bring to the reader a better understanding of trees. Nearly 200 pages give keys for the identification of trees and wood, a vacation guide to national forests, tables useful to forest workers, and a glossary of unusual terms.

Six pages of colored photographs of wood and plant life, together with illustrative drawings, provide added interest to the reader.

DE LAVAL ENGINEERING HANDBOOK. Published by De Laval Steam Turbine Co., Trenton 2, N. J. 1949. Revised Edition. $2.00.

Reference data, information, and formulas have been compiled in this handbook to facilitate the work of power plant, industrial and design engineers. It is divided into six main sections: (1) Mathematical, mechanical and fluid information of a general nature applying to more than one of the following sections, (2) Steam turbine data, (3) Centrifugal pump data, (4) IMO pump data, (5) Compressor, blower and exhauster data, (6) Helical reduction gear data, (7) Worm reduction gear data. A list of local representatives available for consultation is included.

MODERN PLASTICS ENCYCLOPEDIA. 1949. Published by Plastics Catalogue Corp., 122 E. 42nd St., New York 17, N.Y. 1371 pages. $5.00.

Divided into twelve major sections, each section of this annual catalogue treats on some phase of the use or treatment of plastics. The first section, Plastics In Use, would probably be of most interest to the layman as it entails plastics used for architecture, furniture, interior decoration, radios and musical instruments, transportation, sporting goods, machinery, wearing apparel and accessories, jewelry, novelties and notions, and many others.

Section two concerns itself with materials, giving the forms in which many types of plastics are available, outstanding characteristics, typical applications, references for further research and list of trade names.

Another section treats on fibres and fabrics such as nylon, vinyl resin, protein, viscose rayons and coated fabrics. Each one is broken down to its general characteristics and processing methods and in some cases the history and recent development.

In the section on laminates and resinwood products, the book tells of the recent developments, history, general characteristics, forms, sizes, grades, property values and applications of vulcanized fibre, sandwich constructions, molding high pressure laminates, molding low pressure laminates, fabricating high and low pressure laminates, plywood, laminated wood and modified wood.

One section contains technical data and charts including a survey of the properties of plastics, chemical formulae chart, folding chart on the properties of plastics, plastic films chart, plastics identification chart, statistics of the industry and a solvents chart.

Sections on coatings, film and sheeting, engineering design, molding, extruding and casting, fabricating, finishing and assembly, machinery and equipment, and a directory are included in this catalogue.

Between the various sections are advertising pages. At the end of the volume is a list of manufacturers of plastics along with their top executive and sales personnel. Also, a directory of registered trade names of plastic materials and processes is given.

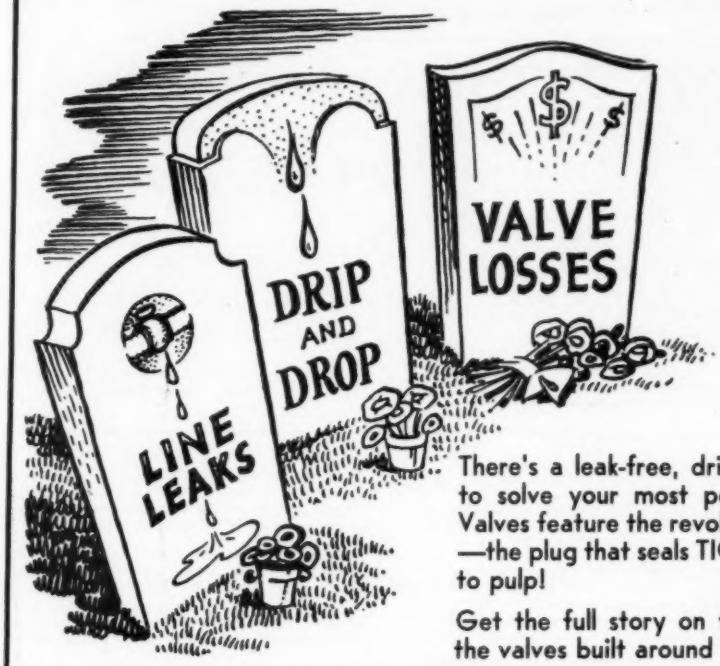
Booklets and Pamphlets

CORN CHEMISTRY REPORT OF PROGRESS. By Norman F. Kennedy. Published by Corn Industries Research Foundation, 3 E. 45th St., New York 17, N.Y. 14 pages. This is a discussion of the basic research program of the Corn Industries Research Foundation. A branch diagram employing two major groups of fundamental sciences with their various sub-branches is shown, and a review of the results of research completes the booklet.

THE CASE FOR FORESTRY IN CANADA. Published by the Canadian Forestry Association, Montreal, Quebec, Canada. 24 pages. This booklet summarizes the vital facts and pressing need to increase the yield of forests and to support still greater forest industries. The idea behind the summarization is to promote the meeting of a second Canadian Forestry Congress which would serve as a public forum for discussion of forestry problems concerning the nation. Colored comparison charts, graphs, etc., make this an interesting booklet.

FOURTH REPORT TO CONGRESS OF THE ECA. Available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. 134 pages. 35c. Contents cover activities under the ECA of 1948 (Title I of Public Law 472) and China Aid of 1948 (Title IV of Public Law 472), as well as the program of economic aid to the Republic of Korea under the provisions of the Foreign Aid Appropriation Act of 1949 (Public Law 793, 80th Congress). Included in the appendix is a summary of the status of the United States Foreign Relief Program and the United States Foreign Aid Program.

ALFRED P. SLOAN FOUNDATION, INC. Report for 1947-1948. Published by Alfred P. Sloan Foundation, Inc., 30 Rockefeller Plaza, New York 20, N.Y. 62 pages. The periodic report discloses the identity of the recipients of grants administered from a private fund for the benefit of the public, by the Sloan Foundation. Sums involved, and the nature of various undertakings which the grants have financed are included. An attempt is



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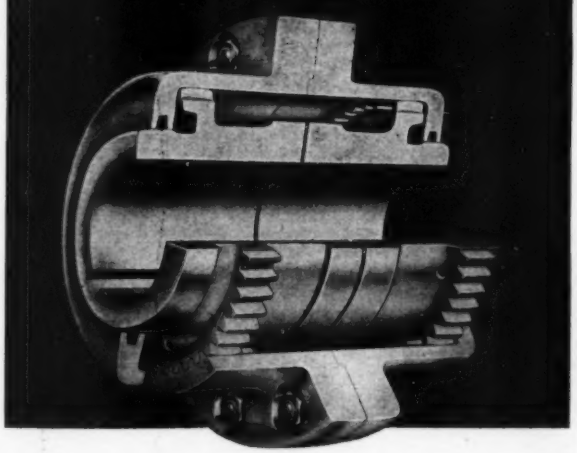

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made to explain the principles and policies observed by the Foundation's administrative staff and trustees in deciding which of the worthy projetcs shall receive consideration.

AMERICAN MANAGEMENT ASSOCIATION ANNUAL REPORT 1949 . . . Published by American Management Association, Inc., 330 W. 42nd St., New York 18, N.Y. 14 pages. Included in this report is a forecast of the areas of management interest in the immediate future and a summary of management activities in all aspects of management during the past twelve months.

Manufacturers' Publications

Through the co-operation of manufacturers and suppliers, THE PAPER INDUSTRY AND PAPER WORLD *lists the following catalogues, bulletins, and booklets. They may be obtained without cost or obligation, unless otherwise specified, by writing direct to the manufacturers. Please address requests on your company letterhead.*

Esters. Glyco Products Co., Inc., 26 Court St., Brooklyn 2, N. Y.—24-page brochure gives physical properties and uses of certain higher fatty acid esters, such as slycerol, many glycols, and polyglycols.

Steam Traps. Sarco Co., Inc., Empire State Bldg., New York 1, N. Y.—22 bulletins comprise the catalog featuring equipment manufactured by this company. Traps and valves, air eliminators, level controls, blenders, thermostats, etc., are described and illustrated. Price lists, dimensional tables, and sectional pictures of the various equipment are included.

Lubricants. Dow Corning Corp., Midland, Mich.—Two 4-page bulletins describe silicone greases as ball bearing lubricants. Silicone Notes No. D-5 gives the properties, performance and uses of these lubricants. Silicone Notes No. D-6 contains information on how to use DC 44 Silicone grease in the bearings of electric motors and includes instructions for lubricating open and single shielded ball bearings, and relubrication schedules.

Casters. Bassick Co., Bridgeport, Conn.—4-page bulletin describes and illustrates the new line of forged-steel precision-type heavy-duty casters manufactured by this company. Specifications and construction features are given.

Gearmotors. Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.—12-page Book No. 1815A describes and illustrates the gearmotors manufactured by this company. Dimensional tables, selection tables and listing of minimum sprocket wheel diameters, in addition to a table of maximum permissible overhung loads, are included.

Controllers. Control Equipment Corp., Kane, Pa.—4-page bulletin describes and illustrates the consistency controller manufactured by this company. Installation sketches are shown.

Oilers. Gits Bros. Mfg. Co., 1846-66 So. Kilbourn Ave., Chicago 23, Ill.—8-page bulletin describes and illustrates Visual oilers made of unbreakable plastic. Photographs and diagrams, together with endorsements from equipment manufacturers and maintenance engineers on specific applications, are shown. Detailed catalogue information on every oiler is included.

Valves. The Kenndy Valve Mfg. Co., Elmira, N. Y.—A double 3-way folder, Circular 101, describes and illustrates the bronze globe and angle valves produced by this company. Section drawing gives visual reference and explanation of a complete valve. A table of available sizes and dimensions is included.

Motors. U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.—8-page Bulletin No. 1524 uses natural color photo reproductions and progressive drawings to describe special features of the uniclosed motor. Comparison of lubrication methods is illustrated.

Testing Instruments. Thwing-Albert Instrument Co., Penn St. and Pulaski Ave., Philadelphia 44, Pa.—2-page leaflet No. P-480 pictures and describes testing instruments such as tearing tester, tensile strength tester, electric hygrometer, penescope, vapometer, pyrometer, etc.

Agitator. Mixing Equipment Co., Inc. 1024-1040 Garson Ave., Rochester, N. Y.—20-page Catalogue B-89 describes and illustrates the heavy duty turbine agitator. Cutaway views, composite drawings, and pictures of the agitator in action are shown.

Sealing Machine. Seal-O-Matic Machine Mfg. Co., Inc., South Hackensack, N. J.—4-page leaflet describes and illustrates a new automatic sealing machine, for self-mailer folders, letters, folded mailing cards, etc.

Bearings. The Gwilliam Co., 360 Furman St., Brooklyn 2, N. Y.—16-page Catalogue No. 25 describes this company's line of roller thrust bearings, ball thrust bearings, step bearings, journal roller bearings and special bearings. Various types are illustrated and standard sizes listed in tabulated form.

Flotation. Denver Equipment Co., 1400 17th St., P. O. Box 5268, Denver 17, Colo.—22-page Bulletin No. F10-B29 discusses the discovery and theory of flotation. Steps in recovery and application of flotation are given. Description and illustrations of the Sub-A flotation machine are provided, also the laboratory testing service available through this company is explained.

Faceshields. Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Pa.—4-page Bulletin No. CN-3 describes and illustrates the line of faceshields manufactured by this company.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of The Paper Industry and Paper World, published monthly at Mount Morris, Illinois, for October 1, 1949. State of Illinois, County of Cook, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared A. Scott Dowd, who, having been duly sworn according to law, deposes and says that he is the business manager of THE PAPER INDUSTRY AND PAPER WORLD and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editors, and business managers, are: Publisher, Fritz Publications, Inc., 59 East Van Buren Street, Chicago, Ill.; Editor, Besse Merrithew, 59 East Van Buren Street, Chicago, Ill.; Editorial Director, Richard W. Porter, 59 East Van Buren Street, Chicago, Ill.; Business Manager, A. Scott Dowd, 59 East Van Buren Street, Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member must be given.) Fritz Publications, Inc., 59 East Van Buren Street, Chicago, Ill.; Mrs. Annie C. L. Fritz, 6801 South Crandon Avenue, Chicago, Ill.; Mr. A. Scott Dowd, 6801 South Crandon Ave., Chicago, Ill.; Miss Abigail C. Bruce, 2446 Oak Park Avenue, Berwyn, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, give the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also, that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of his publication sold or distributed, through the mail or otherwise to paid subscribers during the twelve months preceding the date shown above is

(This information is required from daily publications only.)

A. SCOTT DOWD,
(Signature of business manager.)

Sworn to and subscribed before me this 7th day of October, 1949.
[SEAL]
My commission expires April 21st, 1952.

MAX SIMON, Notary Public.

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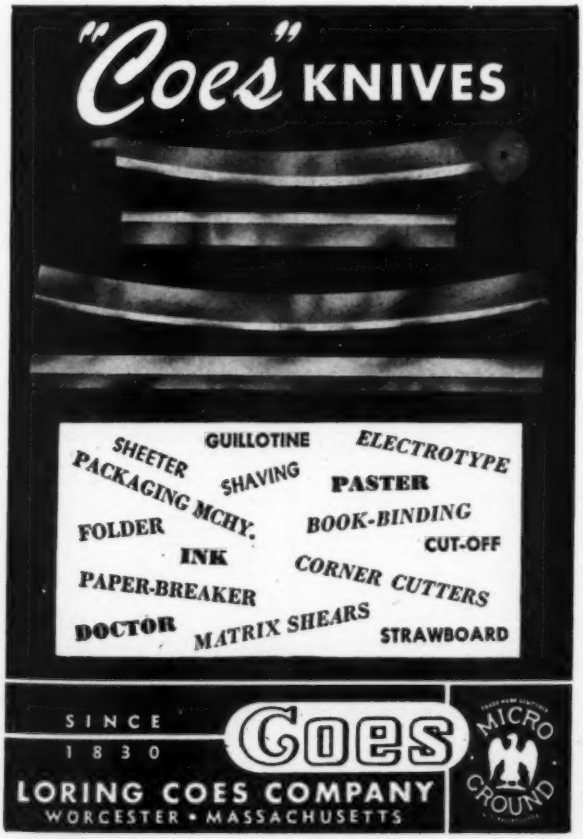

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Splicing Tissues
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Make more paper and more profits with the PERMUTIT WHITE WATER RECLAIMER!

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MARKET QUOTATIONS

RAGS (Domestic)

NEW RAGS

Quotations to consuming mills, cents per pound or dollars per hundred pounds, f.o.b. New York, follow:

	per cwt.
Blue Overalls	6.25 to 6.50
Corduroy, Men's	5.25 to 5.50
Corduroy, Ladies'	5.25 to 5.50
Washables, No. 1	3.50 to 3.75
Percales	6.00 to 6.25
Light Prints, No. 1	5.50 to 5.75
Khaki Cuttings—	
Bleachable	4.50 to 4.75
Unbleachable	4.00 to 4.25
New White Canvas	11.25 to 11.75
New Mixed Blacks	3.50 to 3.75
Canton Flannels, Bleached	10.75 to 11.00
Shirt Cuttings—	
New White No. 1	10.50 to 11.00
White Shrunk	10.00 to 10.25
Silesias No. 1	6.75 to 7.00
New Unbleached	10.50 to 11.00
Fancy	5.25 to 5.50
Linen Cuttings—	
American	8.00 to 8.25
White	14.00 to 15.00
Grey	13.50 to 14.00

RAGS (Domestic)

OLD RAGS

Quotations to consuming mills, dollars per hundred pounds, f.o.b. New York, follow:

	per cwt.
Roofing—	
No. 1	1.45 to 1.50
No. 2	1.35 to 1.40
No. 3 and No. 4	1.15 to 1.25
Twos and Blues—	
Repacked	3.00 to 3.25
Thirds and Blues—	
Repacked	2.75 to 3.00
Miscellaneous	2.25 to 2.50
Whites, No. 1—	
Repacked	4.50 to 4.75
Miscellaneous	3.25 to 3.50
White, No. 2—	
Repacked	3.25 to 3.50
Domestic	7.50 to 8.00

RAGS (Foreign)

ex dock New York City

NEW RAGS

	per cwt.
New Dark Cuttings	Nominal
New Mixed Cuttings	
New Light Silesias	
Light Flannelettes	
Unbleached Cuttings	
New White Cuttings	
New Light Oxfords	
New Light Prints	

RAGS (Foreign)

ex dock New York City

OLD RAGS

	per cwt.
No. 1 White Linens	Nominal
No. 2 White Linens	
No. 3 White Linens	
No. 4 White Linens	
No. 1 White Cottons	
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	
Extra Light Prints	
Ord. Light Prints	
Med. Light Prints	
Dutch Blue Cottons	
French Blue Cottons	
French Blue Linens	
Checks and Blues	
Linsey Garments	
Dark Cottons	
Old Shopperies	

ROPE and BAGGING

f.o.b. and ex dock New York City

	per cwt.
Gunny No. 1—	
Foreign	Nominal
Domestic	7.50 to 8.00
Wool Tares—	
Light	7.50 to 8.00
Heavy	8.00 to 8.50
No. 1 Scrap Bagging	5.25 to 5.50
Manila Rope—	
No. 1 large	5.50 to 5.75
No. 1 small	4.50 to 4.75
Sisal Rope—	
No. 1 large	5.00 to 5.25
No. 1 small	4.50 to 4.75
New Burlap Cuttings	7.50 to 8.00
Jute Threads—	
Foreign (Nom.)	6.50 to 7.00
Domestic	6.00 to 6.50
Strings—	
No. 1 sisal	4.50 to 4.75
No. 2 sisal	4.00 to 4.25
Soft jute	4.25 to 4.50
Mixed	2.50 to 2.75

WASTE PAPER

The following are quotations, dollars per ton, for No. 1 packing f.o.b. New York:

Shavings—	per ton
Hard White Env. Cuts.	95.00 to 100.00
Hard White, No. 1	75.00 to 90.00
Soft White No. 1	70.00 to 75.00
Soft White, one-cut	85.00 to 90.00
Soft White, Misc.	55.00 to 60.00
Fly Leaf, No. 1	30.00 to 32.50
Fly Leaf, Woody No. 1	22.50 to 25.00
No. 2 Mixed Col. Woody	17.50 to 20.00
Flat Stock—	
No. 1 Heavy Books and Magazines, Repacked	26.00 to 28.00
Mixed Books	13.00 to 14.00
Ledger Stock—	
No. 1 White	45.00 to 50.00
No. 1 Mixed (Colored)	32.50 to 37.50
Manilas—	
New Env. Cuttings	60.00 to 65.00
New Env. Cuts, One-Cut	—
Extra Manilas	—
Manila Tab Cards, Free of Ground Wood	65.00 to 70.00
Colored Manila Tab Cards	35.00 to 40.00
Kraft—	
New Envelope Cuttings	60.00 to 65.00
Tripled Sorted No. 1 100%	30.00 to 35.00
New 100% Cor. Cuts	30.00 to 35.00
No. 1 Old Assorted	25.00 to 27.50
News—	
White Blank	50.00 to 55.00
Overissue	14.00 to 15.00
No. 1 Folded	10.00 to 11.00
Old Corrugated Containers	15.00 to 17.00
New Jute Corrugated Cuts	20.00 to 22.00
Mill Wrappers	8.00 to 9.00
Box Board Chips	7.00 to 8.00
No. 1 Mixed Paper	7.00 to 8.00

CHEMICALS

f.o.b. shipping point

Alum (Papermakers)—	
Lump, cwt.	4.05—
Ground, cwt.	3.80—
Powdered, cwt.	4.20—
Blanc Fixe—	
Pulp, bulk, ton	77.50—
Dry, barrels	85.00—
Bleaching Powder—	
Drums, cwt.	4.25 to 4.50
Casein (Domestic Standard)	
20-30 mesh (bags), lb.	
80-100 mesh (bags), lb.	21.00 to 22.00
Argentine, lb.	19.50 to 20.00
China Clay—	
Domestic Filler	
Bulk (mine) ton	10.00 to 15.00
Domestic Coating	
Bulk (mine) ton	15.00 to 25.00
Imported (ship side)	
Bulk (lump) ton	22.00 to 30.00
Chlorine—	
Tank cars (wks) cwt.	2.40 to 2.70
Gelatine (silicin), lb.	1.25 to 1.35
Glyc. (C.P.) drums, lb.	.24½ to .25
Litharge, powd. bbl. lb.	.14¾ to .15¾
Rosin (Gum)—	
New York, per 100 lbs.	
E	7.55—
F	7.55—
G	7.55—
WWX	7.80—
Rosin (Wood), carlots, F.O.B. South	5.50—

MARKET QUOTATIONS

Salt Cake—
Dom. bulk (wks) ton..... 22.00 to 24.00
Imp. bulks on dock—
(Atl. ports) ton (Nom.) 25.00—

Soda Ash—
Bulk (works), cwt. ..... 1.10 to 1.20
Paper Bags, cwt. ..... 1.30 to 1.40
Barrels, cwt. ..... 1.70 to 1.80

Soda (Caustic)—
Solid drums, cwt. ..... 3.05 to 3.10
Ground and flake, drums, cwt. ..... 3.45 to 3.50

Sodium Silicate—
60 deg. 55 gal. drums, (works) cwt. ..... 1.65 to 2.05
40 deg. 55 gal. drums, (works), cwt. ..... .80 to 1.45

Starch—
Pearl, 140 lb. bags, cwt..... 4.82—
Pearl, barrels, cwt..... 4.82—
Paper, (Sp.) bags, cwt..... 4.82—
Powdered, barrels, cwt..... 4.93—

Sulphur (Crude)
(Mine) bulk, long ton..... 16.00 to 18.00

Talc—
Dom. 100 lb. bags (mine) ton ..... 22.00 to 28.00
Canadian ..... 35.00 to 45.00

Titanium Dioxide—
Barium Pig, bbls., lb..... .19½ to .21
Calcium Pig, bbls., lb..... .19½ to .21

Zinc Sulphide, bbls., lb. ..... 11.50 to 11.75

WOOD PULP

Prices, dollars per short, air dry, ton, on dock American ports and f.o.b. shipping points with former OPA freight allowances, are:

Bleached sulphite, Swed... 118.00 to 122.00
Bleached sulphite, Finish..118.00—
Bleached sulphite, dom..... 118.00—
Easy bleaching sulphite.... —
Unbleached kraft, Finn..... 94.00—
Unbleached sulphite, Swed. 100.00 to 105.00
Unbleached sulphite, Fin. 115.00—
Unbleached sulphite, dom. 100.00—
Unbleached kraft, Swedish 85.00 to 90.00
Unbleached kraft, northern 94.00 to 105.00
Unbleached kraft, southern 80.00—
Bleached sulphate, Swedish 125.00 to 128.00
Bleached soda, domestic.. 113.00—
Sulphite screenings, dom. 40.00 to 50.00
Sulphate screenings, dom. 40.00 to 50.00
Groundwood, domestic and Canadian ..... 65.00 to 67.50

PAPER

f.o.b. New York City

Boards—	per ton
Binders	94.00—
Chip	70.00—
Chip, tube and can	75.00—
Chip, full blending	77.50—
Chip, agl. mla. lined	77.50—
Coated, white patent .016	110.00—
.020 and heavier	100.00—
Kraft linar	95.00 to 105.00
Filled News	72.50—
Container	85.00—

Book Papers—f.o.b. mill with quantity, weight, manufacturing and other differentials allowed:

(Per cwt. in ton lots)
Uncoated (Untrimmed)

Book, White (M. F.)—	
A Grade E. F.	15.40—
B Grade E.F.	14.90—
A Grade S. C.	15.90—
B Grade S. C.	15.40—
No. 2 Uncoated Offset 4 sides, White	—
Machine Coated White (Trimmed 4 sides)	
No. 1 Glossy	19.75—
No. 2 Glossy	19.25—
No. 3 Glossy	17.75—
No. 4 Glossy	—
No. 2 Offset	15.15—
C1S Litho (Varnish)	—
C1S Litho (Non-Varnish)	—

Writing Papers—f.o.b. mill with zone, quantity, packing and other differentials allowed:

Rag Content Bond— (In Ton Lots)	per cwt.
Extra 100% Rag	51.40—
100% Rag	44.55—
75% Rag	33.90—
50% Rag	28.10—
25% Rag	24.85—

Rag Content Ledger— (In Ton Lots)	per cwt.
Extra 100% Rag	52.05—
100% Rag	45.65—
75% Rag	35.15—
50% Rag	29.40—
25% Rag	26.15—

Sulphite Bond—	per cwt.
Air dry, watermarked	—
No. 1 watermarked	17.50—
No. 2 watermarked	16.60—
No. 4 watermarked	15.60—

Sulphite Ledger—	per cwt. Zone
No. 1 watermarked	18.80—
No. 2 watermarked	18.05—
No. 4 watermarked	17.50—

Glassine (f.o.b. mill)—	per cwt.
Embossed (25 lb. up)	—
Bleached (25 lb. up)	—
Unbleached (25 lb. up)	—
Greaseproof—	
Bleached (25 lb. up)	—
Unbleached (25 lb. up)	—

News—	per ton
Rolls, Standard Contract)	100.00 to 103.00
Rolls (Spot)	(Nominal)
Sheets	110.00—

Tissues (Carlots)—	per ream
White No. 1	1.55—
White No. 2	1.30—
Bleached Anti-Tarnish	—
Colored	—
Anti-Tarnish Kraft	1.37½—
Manila	1.60—
Napkins, semi-crepe (12½ lb. to M shts.) per cs.	.80—
Napkins, full crepe and emb'sed (12½ lb. to M shts.) per cs.	.80—
Toilet, Bleached (M. shts.) per cs.	6.80 to 6.95
Toilet, Unbleached (M. shts.) per cs.	5.75—

Towels—	per case
Bleached	5.25—
Unbleached	4.50—

Wrappings (Kraft)—	per cwt.
Super-Standard	8.00 to 8.50
No. 1 Wrapping	7.00 to 7.50
Standard Wrapping	6.25 to 6.75
Standard Bag	5.75 to 6.25
Variety Bag	—

Wrappings (Sulphite and Bleached Kraft)— (Rolls, f.o.b. mill)	
Bleached Papers—	per cwt.
M.F. & M.G. Waxing, 20 lb. (Carloads only) (10,000 lb.)	—
Drug wrapp., 35 lb.	—
Unbleached Papers—	
Com. Gr. Butch. 40 lb.	—
No. 1 Butchers	—
No. 1 Imit. Parch. & Dry Fin. Groc. Sulphite, 30 lb.	—
No. 2 Imit. Parch. & Dry Fin. Groc. Sulphite, 30 lb.	—
Steam Finish, 50 lb.	—
Water Finish, 50 lb.	—
Manilas—	
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Envp. Mla., Sub. 16-28 (No. 2)	—
Envp. Mla. (Prices based on large sheets untrim'd ream marked, in bdls.)	—
Wrapp Mla. 35 lb. up—	
No. 1	—
No. 2	—
M.G. Sulphite and Kraft (other than Waxing)	
Grade B20 lb.	—
Grade A-22 lb.	—

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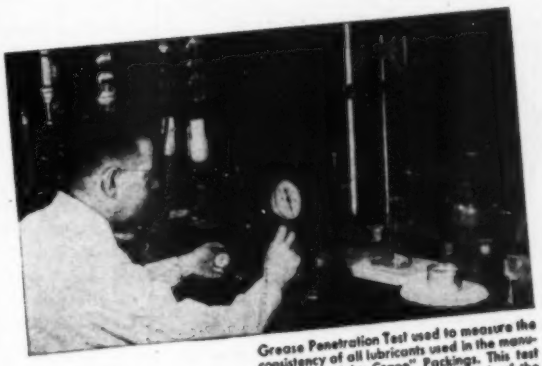

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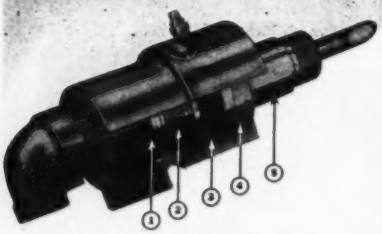

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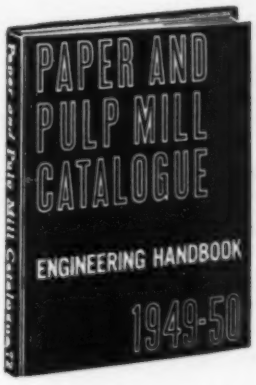

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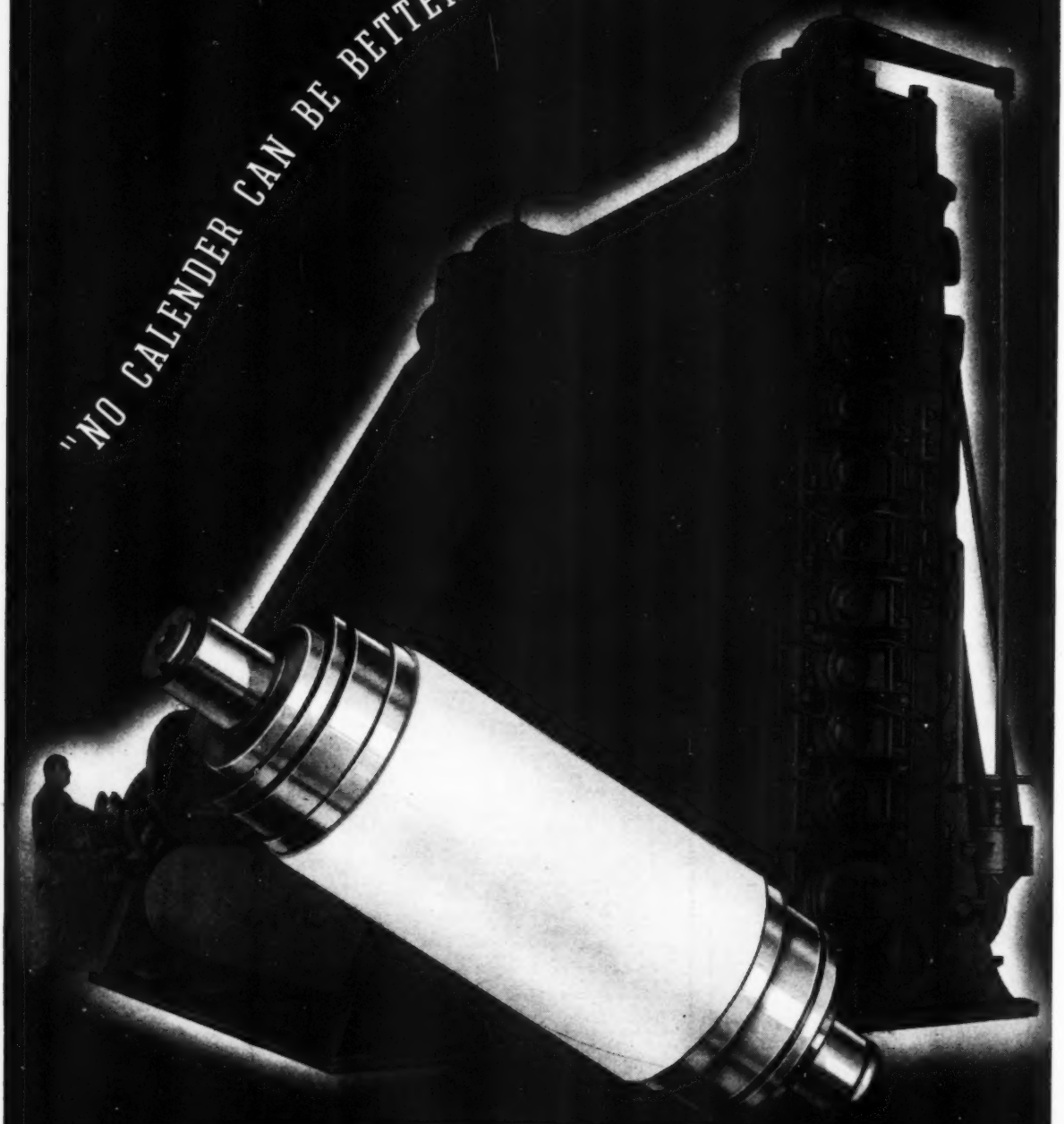

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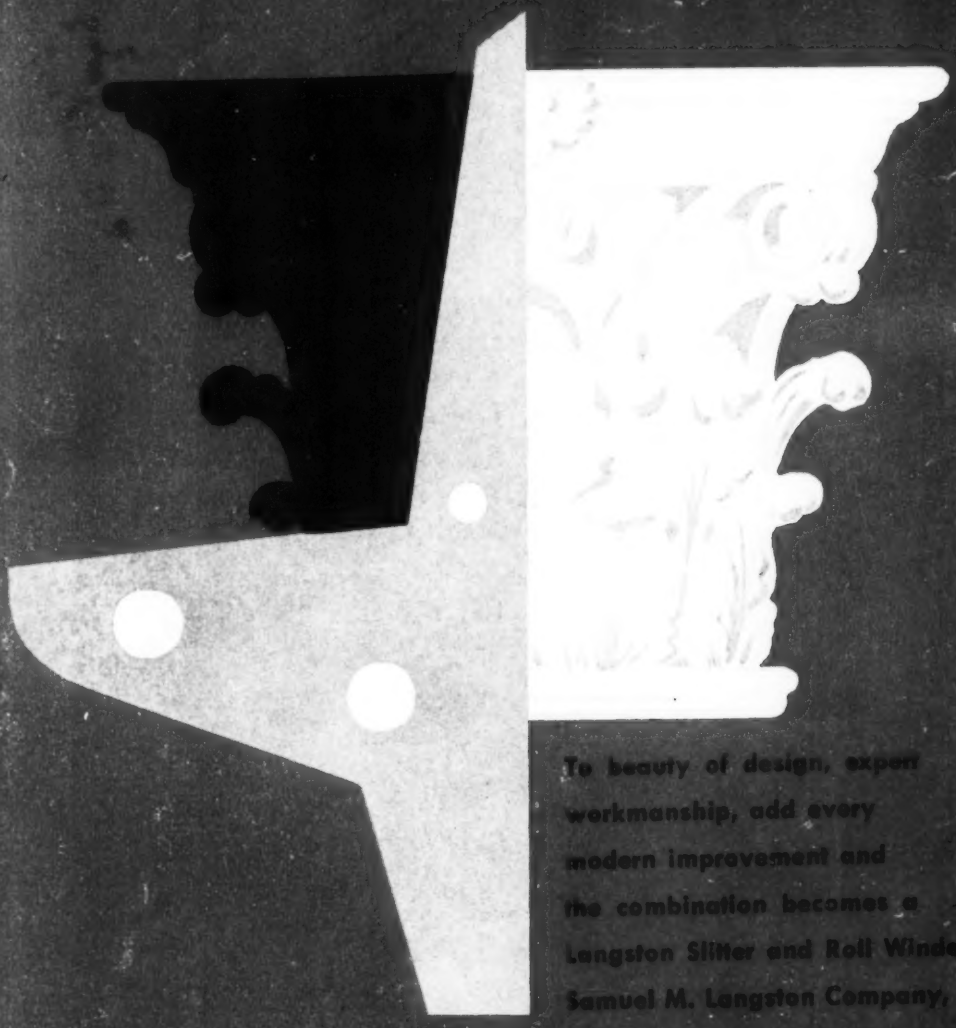

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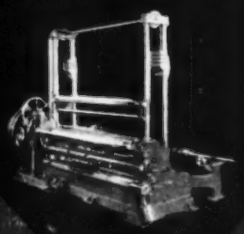

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